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ABSTRACT

This study was undertaken to determine whether the libraries of Worcester Polytechnic Institute, the College of the Holy Cross, and Clark University should be merged. Four types of data were collected: (1) objective--quantitative analyses of faculty and student use of the libraries and collection duplication/triplication; (2) subjective--opinions and judgements of faculty, students, librarians, and library administration; (3) historical--comprehensive review of success and failure of past interlibrary cooperation; and (4) systems--individual systems requirements of each library and potential for economics through joint action. Costs, monetary and non-monetary, were found to outweigh the benefits of library merger. Two-mile distances between the three colleges rendered it impossible for one library to replace all libraries. The eight recommendations included: (1) study of extending direct borrowing privileges to students from the other institutions; and (2) placement of a single computer output microform catalog of recent acquisitions of all three libraries adjacent to all card catalogs. Descriptions of the libraries and outlines of studies conducted are included. (KP)

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THE VIABILITY OF MERGING THREE
ACADEMIC LIBRARIES
IN WORCESTER

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by

David Kaser
and
Jinnie Y. Davis

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Graduate Library School
Indiana University, Bloomington

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I. PREFACE

In December 1976, Clark University, the College of the Holy Cross, and Worcester Polytechnic Institute filed a request with the Carnegie Corporation of New York for financial assistance to enable them to explore "the feasibility of developing a coordinate, single library" to serve the needs of the three institutions. The foundation granted the request, and in February 1977 the institutions contracted with the authors, both from the Graduate Library School of Indiana University to make the study. In the late winter and early spring they worked on the assignment in absentia and through brief on-site visits, receiving substantial assistance during the period from librarians and others in the three institutions. They spent the month of May in residence in Worcester, completing the work. This volume constitutes their report, conclusions, and recommendations.

The authors wish to acknowledge the great help they received from virtually everyone they contacted in the course of this study. Cooperation could in no way have been finer, nor could their reception have been more cordial. Gracious hospitality in fact extended far beyond the tri-college community itself and seemed to pervade the whole of Worcester and its environs. It made the experience not only rigorous and demanding for the authors but also pleasant, and they are grateful.

Thanks are also due to Professor Clayton A. Shepherd and John V. Richardson, Jr. (Graduate Library School, Indiana University) for their programming assistance; their time and advice were very much appreciated.

II. THE REPORT

Worcester Polytechnic Institute, the College of the Holy Cross, and Clark University, all in the city of Worcester, requested and received the assistance of the Carnegie Corporation to study the "feasibility" of developing a single library to meet their aggregate needs. In hindsight it appears that the operative noun here expressed inexactly if at all what the institutions really needed. The "feasibility" of merging required no study. On its face, it is "feasible" to merge almost any libraries. The more important question, and the one to which the authors of this report found themselves directing most of their attention, is rather "Ought the three institutions to merge their libraries?" Are there benefits of any kind that would devolve upon the parent institutions from melding their library services and materials under a single administrative oversight? To the original question, in other words, the answer is "Yes, the libraries can be merged, but should they be merged?"

Indicators of four kinds were sought in pursuit of an answer to this second question:

1) Objective indicators--quantitative analyses were conducted in two areas: (a) the libraries' primary user communities, e.g. faculty and students, probing the nature of their use of the resources and services both of their own library-of-record and of the libraries of the other two institutions; and (b) the incidence of duplication and triplication in the three book collections.

2) Subjective indicators--since quality of library service tends as often to be perceptual as actual, opinions and judgments were gathered from a wide range of interested individuals including many students and faculty, all librarians

and principal administrative officers of the three institutions, several trustees, and key officials in a number of other Worcester educational institutions.

3) Historical indicators--a comprehensive review was made of the successes and failures of past interlibrary cooperative ventures both in Worcester and elsewhere, trends were discerned, and prospects noted for enhancing local cooperation.

4) Systems indicators--thorough study was made of the individual systems requirements of each of the three libraries, their respective characteristics and constraints, commonalities and uniquenesses, and of the potential for economies through joint action, especially employing advanced communication and other electronic techniques.

Five specific studies resulted from these efforts, and they constitute the latter portion of this document. The reader is urged to pay special heed to those appended studies because much of the rationale for the generalizations, broad concepts, and conclusions stated here in the main body of the report is developed or explained in detail there. They should be considered integral parts of the total report. Drawing upon what is demonstrated in these studies, the surveyors kept two fundamental questions foremost in their minds as they formulated this report: (1) Can library service to the tri-college community be enhanced through merging the three libraries? and/or (2) Can economies of operation result from merging the three libraries?

Library Enhancement Through Merger?

Since the largest single bloc of faculty dissatisfaction with present library service in the tri-college community concerns what are perceived to be inadequacies in the collections (see Study D), substantial attention was devoted to trying to find ways of extending the collections through merger. The search was unsuccessful, however, in large measure because faculty members already have, through the Worcester Area Cooperating Libraries (WACL), access to all of the library materials in the city. There is nothing in any library that faculty members from the other institutions covet but which is denied to them; access could be no freer under joint ownership than it is now by reciprocity.

But could not, it must be asked, the collections of unique materials be extended if unnecessary duplication of monographs were eliminated or reduced? Several considerations must be brought to bear upon this question. First, a study of the incidence of duplication (see Study C) indicates that there is not really a large amount of unnecessary duplication currently going on; it appears to run about $3,000 per year per library. Second, no sure method exists, even with merger, to eliminate unnecessary duplication of monographs; at best it could be reduced somewhat, perhaps by half. Third, to establish requisite processes for controlling even that half of the duplication would be costly, probably amounting to more than could be recovered by operational savings for many years. More will be said on this matter under the subject of "economy" later in this section. The duplication of journals is also discussed there.

As was implied in the preceding paragraph, much of the present duplication in the collections is "necessary" rather than "unnecessary," with that necessity arising only in part from heavy traffic against particular titles. The major part of that duplication is necessitated rather by duplication within the several curricula themselves, where two or all three institions offer the same or similar academic work. It is part of traditional wisdom that library collecticns can be only the mirror image of the academic programs that they are constructed to support; they can neither lead academic programs, nor can they depart from that inexorable determinative influence of academic programs without forsaking their relevance, without losing their reason for being.

Rationalize the academic programs of the three institutions, and important gains can be made through merger toward maximizing the service quotient of the library. If all tri-college work in the humanities were given at Holy Cross, for example, all work in the social sciences at Clark and all teaching and research in the sciences and technology at WPI, then library books and services could be subject allocated to the three campuses in accord with the same template, attaining an absolute minimum of duplication as a result. That, however, seems unlikely to occur.

Another possible model, also available solely through merger, for reducing to a minimum the duplication in the collections would be the centralizing of all tri-college library materials and services into a single general library building, rather as was done for all liberal arts and graduate study in Nashville, Tennessee, forty years ago. The critical condition that renders the Nashville operation viable, however, is that the distant-most point in that three-institution campus is only a seven-minute walk from the library, a situation that does not exist in Worcester and that therefore, in the view of the surveyors, renders the model impossible of fulfillment in the tri-college group.

Still a third possible model available through merger would be to operate only modest public service counters and expanded reserve collections on each of the three campuses, with a large, central, back-stopping library somewhere in neutral territory. The central structure would presumably contain the bulk of the merged collections, together with a single set of order, catalog, serials, and other internal processing units, and one overarching administration. The potential economies of merging such internal operations are discussed under that heading later in this report. It perhaps suffices to say here that the quality of library service resulting directly from such a plant configuration would be lower than is available now, primarily because most users would then have four library buildings to go to instead of three, with a considerably lesser percentage of anyone's needs of the moment directly and immediately available on the person's own campus. As the attached summary report on interlibrary cooperation (Study A) indicates moreover, the experience with joint storage per se has been uniformly bad; the surveyors see little reason to expect that it would be better in Worcester.

Joint storage facilities have sometimes come into being in the past in situations where two or more institutions were concurrently in need of additional library plant facilities. That, however, is not now the situation in the tri-college group. Clark has adequate library expansion space to take it into the 1990s, as has also Tech; Holy Cross has ample growth space under construction. It may furthermore be the case that no one of the three will ever need additional library construction. It appears certain that, sooner or later, a time will come after which local libraries can begin each year decommissioning library space rather than acquiring more, as communication technology brings to one's terminal instantaneously textual materials from wherever in the nation they happen to be held, rather than forcing readers to rely solely on locally-owned bookstocks. Meanwhile, for faculty members and students in the tri-college group, the one-day interlibrary loan delivery throughout WACL is an excellent service unmatched, so far as the authors know, anywhere else in the country.

The surveyors were also unable to identify any potential improvement in service through merging special activities. Archives are by their very nature so integral a part of the administrative structure of their respective institutions as to militate against their merger. WPI possesses a fine collection of video-taped instructional materials, but its major part comprises locally-operated software--i.e. taped lectures of WPI faculty--which would have little relevance in the other two institutions. WPI's extensive collection of technical reports in microfiche might be more heavily used by the other two institutions, if its existence were more widely known, but that problem in no way relates to merger.

In certain kinds of situations, merger of two or more libraries might result in the availability of more advanced staff competencies. A very large library, for example, might require a full-time resident systems analyst or cost accountant to aid its internal operations, or an Asian linguist or law librarian to give more specialized public service. It does not appear, however, that the merged tri-college libraries would require or make use of people with such profundity of skill or knowledge. Moreover, since the bringing together of all tri-college books and journals in a field is in effect estopped by the decentralized nature of curricula offerings, it would be difficult to retain a specialist librarian in that field to preside over them. One's potential for service would be greatly diminished by the sprawl of such an empire.

Library Economies Through Merger?

Libraries really only do four things. They acquire human records, they organize them, store them, and deliver them for use. Presumably if the tri-college libraries are going to find economies through joint action, it will have to be in one or more of these four activities. They will be reviewed here in that order.

The possibilities for economizing through reduction in the duplication of materials have been discussed somewhat already. As was mentioned above, perhaps $1,500 per year per library could be squeezed out of the duplication of monographs. Some similar economies could probably still be gleaned from reduction of journal duplication, although the three libraries have already taken some useful action on this front and will doubtless continue to do so. It should be noted in this connection, however, that reduction in the number of tri-college subscriptions is not a creature of merger; reduction here is rather a matter of how much less than they presently have on-site the faculty will tolerate, whether unilaterally in a single library, or in several libraries operating in a reciprocal mode, or through total merger. It just may be, moreover, that greater savings can be gained in the libraries through the discontinuation of unique subscriptions to seldom-used journals than from reduction in tri-college duplications, a subject about which more will be said under "Recommendations" at the end of this section. It suffices to say here that only a very small amount could be saved from eliminating through merger some of the unnecessary duplication of materials, and that savings would occur primarily in the monograph collections.

No savings are available through the joint purchase of library materials. Only the most minuscule part of book vendor discounts results from the total annual amount of an account. Discounts from book jobbers are determined rather by (1) the character of the particular title being purchased, and (2) the number of copies of a particular title being bought on the same purchase order. Joint purchasing, of course, would have no impact on the former of these two factors, and the whole point of merger would be to minimize the opportunity for the latter factor to come into play. Even residual necessary duplicates moreover would be unlikely to be purchasable at the same time. In most cases it simply would not happen that faculty members on two or three of the campuses would concurrently recognize local need for the same title, so that multiple copies could be bought on the same purchase order.

Very modest economies of scale could probably be found in merging the purchasing processes of the three libraries. The systems of the three institutions are quite similar and could be articulated with minimal organizational trauma, although the costs of such a melding which are discussed later would be quite high. It should be stressed here furthermore that any economies of scale to be found in this process would be small indeed. The operations of the three separate departments appears to the surveyors to be quite efficient already, with only the most minor culs-de-sac of unexploited time subject to recovery through enlarging the operation. The total gain would be no more than one-half of a clerical salary and might be considerably less than that.

What about the organization of materials? Are there savings to be gained through merging the cataloging operations of the three libraries? Here again the answer must be "No." Ten years ago, prior to the establishment of the Ohio College Library Center (OCLC) through which the three libraries now catalog their accessions, the answer to the question would have been "Maybe." But any potential economies through cataloging in concert then are being gained through OCLC now. Some limited operating cost reductions could be effected by maximizing equipment utilization (primarily OCLC terminals) in a merged catalog department, but for this purpose the costs of requisite commonalizing of presently diverse support systems would more than offset the gains. Those costs are discussed below.

The economics of joint storage have already been discussed, and the surveyors do not see any fiscal benefits to be derived from joint "delivery," meant here in the sense of circulating books. In the past, a few large libraries have managed to economize on their circulation operation through computerization. Recent developments in computer technology, however, seem to run counter to the traditional concern for "critical mass" in this area, as minicomputers come increasingly to be applicable in such small arenas as the three separate circulation departments represent. Reference service in libraries is so totally labor-intensive as to render unproductive any search for economies there through joint action.

In summary, then, some relatively trivial operational savings could be gained through merger, primarily in three areas: (1) reduction in monographic duplication; (2) staff costs in ordering; and (3) staff and machine costs in cataloging. There would, however, be costs involved in effecting these savings.

Costs of Effecting Operational Economies

It is necessary here to note two kinds of costs to accomplishing these several operational economies. The first are the conversion costs, the capital costs of modifying and merging the requisite support systems. The second are nonmonetary costs--psychological costs perhaps, and political costs--that cannot be calculated in dollars. The former, of course, are one-time costs, but the latter tend to be continuing in nature.

By far the greatest capital cost of effecting merger would relate to the development of a single catalog for the three libraries. Although a common catalog could be jerry-built relatively cheaply, the cost of setting up a good, efficient, user-oriented merged catalog would be very high indeed. The cost simply of interfiling the two million cards in the three catalogs would in itself be high, but that would represent only a fraction of the larger amount required to reconcile differences in descriptive cataloging, local interpretations of classification, variant subject-heading practices, and other catalog vagaries that exist among the three libraries. This is not to say that the three catalogs are in any way deficient for their present purposes--as a matter of fact, they seem to be quite good. It recognizes rather that the construction of any effective library catalog involves syndetic paraphernalia unique unto itself. Merging catalogs is not like merging railroads, where all rolling stock can operate over all road-beds. The surveyors did not attempt to develop a sophisticated estimate of the cost of the tailoring and fitting that would be required to make one catalog of the three, but they would not be surprised if it were to exceed a quarter million dollars.

There is no technology, either available now or under development, that can reduce this very high cost. When it is borne in mind, of course, that it is the very existence of a catalog that converts a group of books into a library, the figure appears a bit less overwhelming. It is certainly less overwhelming than a scholar's frustration at facing 700,000 books thrown helter-skelter into a pile. Developing a good common catalog, with its requisite congeries of authority files and shelf-list, might require twelve man-years of interfiling and another more expensive twelve man-years of editing.

The merging of other requisite systems would be vastly less expensive although certainly not inconsequential. They would not be greatly dissimilar from merging the business offices of the three institutions, except in their lesser complexity. Merger would involve important legal questions, perhaps including incorporation, determination of appropriate flow of authority, protection of equity and residual rights, costing formulas, etc. A merged library, it should be noted, would also have to operate its own bursary, personnel program, portfolio (assuming that library endowments now in the three schools would be signed over to the new entity), and administration of contracts and grants. All of these developments would entail transition costs calculable in dollars.

The major non-dollar cost of effecting such a merger would probably come in the removal of the three libraries from the direct advisory oversight of their respective faculties. Even assuming that the new merged creation would have some kind of joint faculty advisory committee, it could never be as sensitive to the needs both psychical and physical, the whimsies and caprices, the unique concerns of the faculty as the separate libraries are now. Academic libraries have been called many things, from the "heart of the university" to "the aggregate memory of man," none of which are wholly inapt. But to serve its purpose best, an academic library must be a faculty member's "tool-room"--not just any old tool-room, but his tool-room. It has been said in jest that the Library of Congress can never be a great research library because it lacks a faculty "to come around and raise hell once in a while." Jest or no, there is some truth in the statement. It is the view of the surveyors that a joint library in Worcester would diminish somewhat the level of responsiveness which faculty members in the three institutions now feel they have in their respective libraries. They would never be as outspoken in their relations with a joint library as they are now within their respective institutions. That would be a loss.

Kin to that--indeed perhaps only another way of saying the same thing--is that merger would remove library activities from the autonomy of the institutions. At present each library is subject to the direct decision-making authority structure within its own institution. A merger would require each institution, following the taking of its own internal decision regarding the library, to go through a political process of trying to convince its neighbors that it is also in their best interests to take a like decision. As in the United Nations, some frustrations are certain to result. Many believe that academic decision-making is already painfully slow; that slowness would be compounded if another alien process were superimposed upon actions regarding the library.

Conclusions and Recommendations

It is the judgment therefore of the surveyors that the costs, monetary and non-monetary, outweigh the benefits to be gained from library merger in the tri-college group. They say this fully aware that overriding benefits have been found in several other library mergers in the nation--notably in Atlanta, Nashville, and Claremont, California (see Study A). In those locations, however, it was the contiguity of the cooperating institutions that brought the benefits above the costs. In short, the two-mile distances between the tri-colleges render it impossible for one merged library to replace three separate libraries, and the remaining potential savings are too small to warrant the costs.

This is not a general finding; it applies only to the Worcester tri-colleges. There may be situations elsewhere in the world where merger could be cost-effective despite intercampus separations of two miles or of even greater distances. Given the distance, however, and the unique configuration of other circumstances studied here, the resulting recommendation is against merger.

It is the opinion of the surveyors that, although merger is not appropriate, other lesser steps could well be taken by the tri-colleges to effect a freer flow of library materials and patrons among them and to enhance library services in the community. Some of these steps might well be taken multilaterally within WACL rather than trilaterally by the three institutions. All of the following recommendations will require some funding, and the authors have taken the liberty of attaching gross cost estimates to each.

1) The libraries should study carefully the merits and difficulties of extending direct borrowing privileges to students from the other institutions. This is patently not as simple as it first appears, and it is fraught with hazards, but the user survey appended hereto clearly indicates that such access is needed. Some modest savings would accrue from direct borrowing, since local interlibrary lending would probably be cut by at least half, permitting some redeployment of staff. If the decision were made in favor of direct borrowing, the authors would suggest the following caveats be made part of the decision:

a) the program be adopted first for a one-year trial period only;

b) a student's home institution be given responsibility for retrieving books borrowed from another library rather than its becoming the lot of the lending library;

c) a special contingency fund of $5,000 be set aside for the trial year out of which lending libraries could recoup any out-of-pocket costs for book losses.

It would be neat if all three libraries could adopt a common circulation process as part of this program, but that should not be considered essential to the success of the effort.

2) A single catalog in Computer-Output-Microform (COM) of recent acquisitions into Worcester libraries should be developed and placed on permanent display adjacent to the libraries' card catalogs. Most WACL institutions have been cataloging their monographs with the assistance of OCLC for about three or four years. All cataloging done in this mode can be economically computer-programmed to be stripped from the OCLC data base, merged, and printed in microformat as a recent Worcester-area union catalog. It would be helpful here if Clark would abandon its local classification scheme entirely and complete its reclassing in the OCLC mode so that those entries would also come into this COM catalog. The availability of such a catalog would greatly stimulate increased interlibrary traffic among the participating institutions. The cost to the tri-college group of preparing such a catalog and for up-dating it twice would approximate $15,000, including requisite reading machines.

3) The three libraries should study the desirability of joining the Center for Research Libraries with its large bank of jointly-owned, seldom-used periodicals. It would be feckless simply to join without concurrent programs for

reducing the number of local periodical subscriptions. A sum of $15,000 would permit the three libraries to belong to CRL for three years, during which time they could drop subscriptions and experiment in company with their respective faculties in alternative modes of providing access to journal literature.

4) *The three libraries should adopt experimental "current awareness" programs, such as distributing journal tables-of-contents* to members of their faculties, with offers to obtain photocopies of necessary articles as needed. This program should also be viewed as a possible alternative to expensive local subscriptions. The three libraries could carry on such a program for three years at a total cost of $10,000, at the end of which period a decision could be made as to its permanent cost-effectiveness.

5) *The three institutions should be prepared to make faculty research grants-in-aid for the purchase of borrower's cards at Widener Library*. At present such cards cost less than $500 per year. If each institution were to give four per year, the total three-year cost would amount to $18,000. It is difficult to see how more faculty library satisfaction could be bought for a similar sum. It is not suggested here that this program be administered by the tri-college libraries but rather in the same manner as institutional grants-in-aid.

6) *Faculty members should be encouraged to make greater use of computer-based bibliographic search services*. It appears that a primary deterrent to their greater use at the present time may be their cost to individual faculty members, combined with faculty inexperience as to their benefit. They do not want "to buy a pig in a poke." A sum of $10,000 distributed among the three libraries to enable them to pick up faculty costs of machine-searching during a

demonstration period would tend to give potential users a much better understanding of their value.

7) The three institutions should establish programs for the continuing education of their library staffs. Rapid changes are occurring in the library and information science fields, and it is essential that tri-college librarians keep abreast of these changes. Some up-dating can be accomplished through reading the professional press, but there are other developments that can better be learned through attending workshops, seminars, and association conferences at the local, state, and national levels, or by visiting the site of the development as an observer. Part of the costs of such up-dating ought in many cases to be borne by the individual, but the institution is often also a major beneficiary and ought to be prepared to share the cost. A sum of $10,000 spread among the three libraries to cover three years of continuing education would go far to bring tri-college librarians to the growing edge of the academic library profession, thereby assuring up-to-date service concepts in their library programs.

8) The tri-college libraries should encourage WACL to complete its new union list of serials. It appears that this effort has been delayed by logistical rather than financial problems, but whatever the barriers they should be overcome promptly and the project pushed to conclusion. Very clearly, the interlibrary use of journals in Worcester will be facilitated by the availability of this new multi-library finding list of current and retrospective serial holdings.

STUDY A

LIBRARY COOPERATION--AN OVERVIEW

The "Standards for College Libraries," promulgated in 1975 by the American Library Association, recognized two valid motivations for libraries to cooperate--to reduce costs, and to improve services. Libraries had been cooperating, however, for at least two millenia before the "Standards" were written, because the same two motivations to cooperate are also implicit within the timeless canons of good stewardship. It is a regrettable irony that, pushed too far, each of these motivations tends to defeat the other. Too much cost reduction depresses service, and too much service improvement raises cost. Where one can, through cooperation, be modified with disproportionately slighter change in the other, however, or even better, in those rare instances when both can be accomplished at the same time, it has ever been the responsibility of librarians to see that it be done.

There may, under very special circumstances, be other reasons for libraries to cooperate. A cooperative library program may be useful as a symbol of some purposeful relationship which warrants the effort without reference to cost or quality of service, or it may serve as a pilot exercise for some other broader aspiration regardless of cost or service implications. In such cases, of course, the participants should be wholly candid with themselves that the program is being instituted for a special reason, and it should not later have to suffer criticism for not having accrued the two benefits usually sought.

For whatever reason, the notion has pervaded the public mind in the past decade that, on its face, library cooperation is a good thing, regardless either of motivations or of results. Large sums of money were granted to libraries both by foundations and under the Higher Education Act of 1965 to enable them to cooperate. Here however is an anomaly. If a prime purpose of cooperation is to save money, why should libraries receive additional money to enable them to do it? Even if a cooperative program requires investment capital for conversion to a system that will not permit cost recovery for several years, should it require a grant? Banks have been lending money for such purposes in the profit sector since the beginning of time; could they not be prevailed upon to do as well for libraries? Has anyone ever asked them? Or is it rather that libraries have not been able really to demonstrate ultimate savings to bank loan officers with the same level of certitude that banks exact from their commercial customers? If this were the case, then maybe libraries ought not to consider the program in the first place.

Cost-effective interlibrary cooperation is obviously the only kind that should normally be sought, regardless of the source of funds for its accomplishment. It is certainly the only kind that will last beyond the availability of the grant money. A review of the history of interlibrary cooperation in the United States over the past century reveals some magnificent successes and some abysmal failures, not always wholly in accord with the prognostications of society's best minds. In general, all such efforts can be grouped under one of three main rubrics: (1) labor sharing; (2) materials sharing; and (3) facilities sharing. They will be discussed through the balance of this section in that order, followed by a review of total systems mergers.

Labor Sharing

The operation of libraries is a labor-intensive activity. Between 60 percent and 70 percent of the total expenditures of academic libraries is for personnel. It should follow therefore that, as long as this ratio holds true, the greatest potential for savings in library operations lies in reduction of the work force, much of which would have to come through labor sharing. Labor sharing has been accomplished in two ways through library cooperation: first, through the elimination of unnecessarily duplicated labor among several libraries, primarily in the cataloging area; second, through economies of scale derived from joint operation.

The duplication of labor nationwide in library cataloging was first noted in 1853 by Charles Coffin Jewett, then librarian of the Smithsonian Institution. Catalogers everywhere, he pointed out, were cataloging the same books. He offered to do it once centrally for the nation through the use of stereotype plates made of clay, and then to provide requisite catalog information to whomever needed it, at cost. Unfortunately for library cooperation, his clay warped, he was fired (and went to Brown University), and the idea languished for a half century thereafter. "Jewett's Mud Catalogue" as his scheme was derisively called, was for the time being a failure. But the memory lingered on, and in 1901 the Library of Congress began doing what Jewett had been denied, that is, selling cards for most standard publications to go into other library catalogs. For three-quarters of a century now the Library of Congress has been providing quantum economies in libraries throughout the country and in many foreign lands with this very effective system of labor sharing in the cataloging process.

Not only have local libraries benefitted substantially from the availability of printed catalog cards from the Library of Congress, but they have also been able to find other lesser economies through the elimination of duplication of effort in cataloging. Not all books, after all, come to the Library of Congress for cataloging in the first place, so other major libraries around the land had begun by 1932 to contribute copies of their respective catalog cards to a central repository which came to be known as the National Union Catalog. When publication of that catalog began in 1954, local librarians were able to avail themselves of cataloging done not only in the Library of Congress but also in several other major libraries. Likewise following the cooperative publication in 1927 of the massive Union List of Serials, catalog libraries were able to reduce greatly the amount of duplicative local research that had previously gone into the cataloging of serials. There is no way to calculate the gross dollar savings that these labor-sharing efforts have permitted in the libraries of the nation, but the amount would probably easily reach eight, or perhaps even nine figures.

Labor sharing in the cataloging operation in the United States has attained its maximum potential, however, only within the last five years. With the establishment of the Ohio College Library Center (OCLC) in 1967, extended into New England by NELINET* in 1973, the cataloging labor from hundreds of libraries in the nation can now be put directly into a national on-line bibliographical data bank and retrieved instantaneously through terminals by all other catalogers in the system. This capability is responsible for a recent major reduction in the per-unit cost of cataloging in American libraries, but it has probably also exhausted the cataloging operation of savings potential from labor sharing through the elimination of unnecessary duplication of work. Technology has effected a modest but untrivial reduction in the labor intensity of library operations, and a consequent reduction in cost has been the result. It is perhaps lagniappe that the speed of cataloging has also risen because of the change, a benefit of some moment to library patrons.

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*New England Library Network

Other library operations appear to hold less potential for economy through labor sharing. Duplication of labor simply does not occur in libraries except at the point of cataloging. Lesser economies--primarily economies of scale--have in a few cases been found jointly through combining staffs to accomplish common, but not duplicative, work. Many school libraries, some small public libraries, and a handful of small academic libraries, have on occasion viewed some of their internal operations as lacking requisite "critical mass" for economic viability, and have developed cooperative service centers where labor utilization can be maximized. Such operations as ordering, physical processing, and (before OCLC) cataloging of books were sometimes done through cooperative centers at modest decreases in cost. Few academic libraries have chosen to take this route, however, primarily because it separates these processes from teaching faculty, who can often be well-nigh essential to the proper handling of more abstruse works. The damage that would result from their unavailability, it has been felt, would be more costly than merging the operations could save.

Some academic libraries--for the most part larger research libraries--have on occasion shared staff members with special competencies for which there is inadequate need in a single library. Area or language experts such as Burmese catalogers, or subject specialist librarians such as paleographers or papyrologists have served multiple institutions. Formats for these arrangements have varied. In some cases, one institution has employed the specialist and sold his services to another; in other cases, joint appointments have been used; sometimes consortial appointments have served the purpose. WACL's recent Bibliographical Search Service has functioned largely in this last mode. Where such expertise is very seldom needed, of course, libraries have tended to purchase it in the ad hoc consulting market instead of on a continuing retainer basis, rather as individuals do when they need the services of a physician or an attorney.

Materials Sharing

The sharing of library materials is at least two thousand years old. Access by scholars from elsewhere to scrolls and early codices in classical period libraries is amply documented. Such access was usually by reciprocity or by hire, the former in largely the same manner that the tri-college libraries allow mutual access to their holdings today, and the latter in much the same way that scholars from Worcester institutions can purchase borrowers' cards at the Widener Library at Harvard. Even interlibrary loan was not unheard of in pre-Christian times.

These same traditional forms of materials sharing, augmented since the 1930s by the availability of photocopy in lieu of interlibrary lending, continue to be the most used mechanisms for suppressing duplication in library collections. The rapid proliferation of research programs since World War II, however, without commensurate strengthening of library collections across the land, has brought about an overload in the system which unremedied could well cause a breakdown in materials sharing. Understandably interlibrary traffic (direct access or interlibrary loan) is heavier against large libraries than away from them. The Yales of the nation (if there be more than one) are used more by the Lehighs than the Lehighs are used by the Yales, making the tradition of reciprocal access a noble but one-sided contract. As a result, the largest libraries in North America have in the past year "rewritten the contract," now allowing interlibrary access in return for a cost-recovery fee rather than for a pledge of reciprocity which is destined never to be redeemed. But who pays the fee? The borrowing libraries are not budgeted to pay it and the individuals who sought the materials in the first place are reluctant to pay for what they often perceive as an inadequacy in their own library-of-record. The flow of shared materials is being impeded by this phenomenon.

The sharing of library materials is also suffering impedance from another source. Skyrocketing interlibrary traffic in photocopies has within the past year forced revision of the nation's laws protecting authors' and publishers' copyrights. New mechanisms are now being put into place by which copyright proprietors will, under certain conditions, exact fees for the photocopying of their books and journals by libraries for patrons. Neither patrons nor libraries will be any more ready to pay these charges than they are now to pay for interlibrary loan. It seems certain that the nature of materials sharing in libraries will be altered considerably in the months ahead as a result of these two developments.

Not only have libraries reduced costs through the sharing of materials already owned by them, but they have also sometimes carried the concept to a higher level of sophistication by developing acquisitions programs in anticipation of sharing. In the 1880s and 1890s, for example, the Newberry, Crerar, and Chicago Public Libraries, all then located within a ten-block area, divided the universe of literature among themselves, with each assuming responsibility for acquiring materials solely within its respective assigned subjects. Likewise in the late 1940s the research libraries of the nation established the so-called Farmington Plan, wherein each agreed to acquire comprehensively in an assigned subject or from a particular area of the world. Obviously the assumption of such a responsibility had in every case to be consistent with the academic program of the parent institution; the only time a library can sustain a collecting regimen apart from an academic program is when it has come fortuitously into endowed restricted funds for the purpose. An academic library really has no discretion as to what kinds of material it will contain, but must follow always the academic program of the institution.

Any system of materials sharing among libraries must be based upon a mechanism for determining the location of the materials to be shared. Thus the Farmington Plan encompassed not only the acquisition of appropriate matter into the participating libraries but also its prompt cataloging, with location cards deposited immediately into the National Union Catalog, for the benefit of scholars anywhere who needed it by interlibrary loan, photocopy, or direct access. Through these devices the American research community came into possession of large blocs of unique source material that might otherwise have been foregone in favor of the unnecessary duplication in several libraries of less esoteric books and journals.

Not only have libraries acquired materials on a decentralized basis in anticipation of sharing them, but they have also acquired shared materials centrally for joint use. In the 1960s a number of American research libraries began acquiring files of foreign newspapers and foreign government gazettes in single copies at shared cost and for the benefit of all. In the past five years, this concept has been extended in this country to the development of a single, comprehensive "periodicals bank" at the Center for Research Libraries in Chicago, where all seldom-used scientific and technical journals are acquired at a cost shared by more than one hundred participating libraries. This plan has been even more fully implemented in the United Kingdom, but at government cost.

It seems clear that this concept embraces a large segment of the materials sharing that will take place in the libraries of the future. Single copies of documents of all kinds will be brought to a national central repository with copies or images transmitted upon demand, first by mail and later electronically, to local libraries wherever they are needed. Pushed to the ultimate, such a system could eventually eliminate the duplication of library materials entirely, but that time is not likely to come soon. The technology is not yet up to required standards, and the necessary national conversion will be very costly. Again, the legal implications of such a system are not yet fully resolved. It will likely moreover occur in some disciplines sooner than in others, in high-traffic materials first where the pay-off is greatest, and maybe even never in certain very seldom-used bodies of material. At any rate, many library theorists are now beginning to suggest that by the end of this century local library buildings and collections will probably be as big as they will ever have to be, that thereafter service will continue to improve but by increasingly heavy drafts upon national, rather than upon local stores of documents. Materials sharing will by then have reached its maximum potential.

Facilities Sharing

In 1903 President Eliot of Harvard called for the construction of a joint storage library "for books," as he felicitously phrased it, "not in use." The idea was ahead of its time, however, and it was not until almost a half century later that the first such joint storage library was constructed. Predictably perhaps the building when it came was at Harvard.

The New England Deposit Library (NEDL), however, has never fulfilled its expectations. Harvard uses most of the space simply to shelve overflow from Widener, and it has leased space to neighboring institutions to be used by them for similar purposes.. But wherein is the gain? The building was of somewhat cheaper construction than were its contemporary full-service libraries, and it was built in "the low rent district" rather than on prime property, but these factors have provided at best only very small savings. It costs after all a certain irreducible minimum amount to provide shelter for the 100 or so cubic inches occupied by the average book regardless of whether the structure is a warehouse or a palace. Remote shelving moreover requires an attendant congeries of support systems that add up in cost to a surprising total. The space must of course be heated, lighted, and maintained. A delivery system must be available to fetch books on demand and return them following use. Books to go to storage must be winnowed from those to be retained in the main stack, a decision often demanding a high-order intellectual judgment, and records of their fate must be developed so that they can be found when needed. All of these support mechanisms can easily cost more than the savings in construction cost.

Savings of real consequence can be gained through joint storage only when many libraries deposit copies of the same book and all are discarded save one--when nine or forty-nine copies of a book are scrapped, reducing the requisite shelving cubage to one-tenth or one-fiftieth of what was required before storage. Such a large body of disposable copies of deposited items was never implicit within the NEDL construct, and as a result it may be considered a failure as a joint storage facility. About the same time (1948) the somewhat similar Midwest Interlibrary Center (MILC) was built in Chicago by a corporation established by most of the Big Ten institutions and the University of Chicago, but even this larger group of potential depositors could not find adequate disposable duplication to warrant the cost, and this project also languished until it changed its mission radically more than a decade later. It now appears that joint facilities development "for books not in use" as envisioned by President Eliot can be viable certainly at the national level, perhaps under certain conditions at the multi-state level, but not at all in the smaller community.

Facilities sharing of a somewhat different character, however, has produced some economies in libraries in the past decade or fifteen years. Concerned for its somnolence, MILC in the early 1960s decided on two major departures from its traditional course. Henceforth it would open its services and solicit participants nationwide, and it would mount its own primary acquisitions program of least-used materials directly into its storage stacks for the benefit of members rather than waiting for members to withdraw and deposit slow-moving materials. Immediately it began to flourish, so that today as the Center for Research Libraries (CRL) with more than a hundred members from New England to Hawaii it has become a major national research resource, a "library's library" which relieves its members of the need to duplicate esoteria from campus to campus since they all share its ownership in Chicago.

Merging this centralized storage concept with the economic benefits of the Farmington Plan described in the preceding section has produced recently a new convolution on facilities sharing which appears likely to hold some new savings for cooperating libraries. This has been called both "decentralized storage" and "storage _in situ_." Under this scheme one library in a consortium accepts responsibility for retaining its copy of a duplicated but little used title on its regular shelf but thereafter in the name of the group, thus permitting the other consorting libraries to dispose of their copies of the same title. Responsibilities for archiving copies are assigned around, so that all benefit equally from the relief in shelf-loading. This plan has the merit of not requiring a supernumerary building and of discommoding fewer patrons by the absence of the book. After all, one library (presumably the one where the book is most likely to see use) still retains it on its open shelf where it was before. Consortia in Cleveland and western Massachusetts have recently espoused this concept of decentralized facilities sharing.

Total Systems Approach--Mergers

Three groups of institutions in the United States have viewed the many bits and pieces of potential savings in library cooperation and have attempted to meld them into single monolithic operations through merger. All three were established during the Great Depression, and all three received massive assistance from philanthropic foundations to accomplish their purpose. They are located in Claremont, California, in Atlanta, and in Nashville.

The Claremont Colleges embrace Pomona, Scripps, Pitzer, Harvey Mudd, and Claremont Men's College, all of which are undergraduate institutions, and the Claremont University Center, which administers graduate programs and serves as the holding company for the library services of the group. There is a central library, the so-called Honnold Library, and there are separate college libraries with some duplication of materials and services at two of the participating institutions. The several campuses are contiguous, and although there are understandable stresses, primarily resulting from the distribution of costs among the participating institutions, the merged system has proved successful.

The Atlanta University Center comprises Morehouse, Spelman, Clark, Atlanta University, Morris Brown, and the Interdenominational Theological Center, all of which are on contiguous campuses. In 1932 Atlanta University constructed a central library for the use of all, although each of the colleges maintains a library of its own, while making a token payment to the central library. There are major fiscal problems in this operation, resulting in the eyes of most from the fact that there is so much duplication of materials, services, and staff.

The Joint University Libraries of Nashville were established in 1936 by Vanderbilt University, George Peabody College, and Scarritt College, which are again on contiguous campuses. The JUL administer a central general library and a number of special libraries, such as law, music, education, and medicine. The merger here is total, resulting in single ownership of all books and equipment, central budget and administration, and coordinated processing. Strains are experienced in budgeting, but duplication of materials and effort are kept absolutely minimal, and the operation has proven to be cost-effective.

These are the only merged libraries. Their experience seems to permit some generalizations. They become cost beneficial only when one central library can result in the elimination of two or more other libraries, a situation which can probably obtain only when the central library is within walking distance of all. Total merger can under such circumstances result in minimal duplication and maximal economies of scale. There is some counterbalancing cost to the participating institutions in that they must forsake autonomous library decision-making and thereafter resort to political processes to gain desired ends. Also, as in any troika, the organization can advance only as fast as its slowest horse. As the fiscal fortunes of the participants wax and wane unsynchronously, the joint library will receive only that level of financial support thought by the waning member to be for the moment fundable. It seems clear that under the best of circumstances merged libraries will succeed financially, but without such circumstances they have little to offer.

Conclusions

A recent directory of library consortia in the United States identifies some 400 such organizations ranging from single-purpose groups to the aforementioned total mergers. These consortia have spent in aggregate enormous sums of institutional, foundation, and tax money to effect library goals in concert. Regrettably, however, practically no rigorous evaluations of the cost-effectiveness of their programs have been conducted. In most of the few cases where such evaluations have been concluded, the financial news has been bad. One old established consortium, for example, recently learned that half of its jointly-funded journal collection was costing $112 per use, and it is now abandoning the program. It is at least possible that the total societal investment in library cooperation is costing more than it is returning.

Some national programs--OCLC, the Center for Research Libraries, the Farmington Plan--have proved their cost-effectiveness. Some "walking-distance" mergers--JUL and Claremont Colleges--are saving their participants money. Some smaller special-purpose consortia have found modest savings in such things as union lists of serials and the freeing up of interinstitutional access to library materials. The long and extensive experience of library consortia in America, however, indicates that great prudence is warranted in considering the adoption of any cooperative library program. The track record simply is not good.

STUDY B

DESCRIPTION OF THE TRI-COLLEGE LIBRARIES

Introduction

An overview of the Goddard Library at Clark, Holy Cross' Dinand Library system, and the Gordon Library at WPI may be gained from the figures in Table 1 which show that, in quantitative terms, the three appear to be quite similar in a number of ways. Their total expenditures (salaries and materials) for 1975-76 were $469,882, $363,040, and $435,700 for Clark, Holy Cross, and WPI, respectively. The size of their professional staffs (i.e., those with library degrees) was 5 at Clark, 8 at Holy Cross, and 8.5 at WPI, while their support staffs numbered 15.6, 17.5, and 9.5, respectively. An additional 18,968 (at Clark), 15,902 (Holy Cross), and 12,640 (WPI) hours of student assistance was available that year. In terms of library collections, Clark totalled 347,020 in physical volumes while Holy Cross was close behind with 342,892. Although WPI only reported 138,990 volumes, it should be noted that microforms comprised a substantial portion (465,884) of WPI's total holdings. By comparison, Clark and Holy Cross had only 60,118 and 8,946 items, respectively, in micro holdings. Clark listed an additional 2,025 titles in serial holdings; Holy Cross and WPI had 1,525 and 1,089, respectively, in periodical titles.

Organization

Each of the three libraries is administered by a librarian with faculty status who reports to the chief academic officer of his institution. Under the library

TABLE 1

SELECTED TRI-COLLEGE LIBRARY STATISTICS, 1975/76*

	Clark	Holy Cross	WPI
Budget			
Spent for materials	$202,274	$131,000	$217,181
Spent for Personnel	240,093	216,070	196,449
Total Expenditure	469,882	363,040	435,700
Personnel			
Size of Professional Staff	5	8	8.5
Size of Support Staff	15.6	17.5	9.5
Hours of Assistance	18,968	15,902	12,640
Holdings			
Number of Volumes Held	347,020	342,892	138,990
Periodical Titles Held	2,025	1,525	1,089
Microforms	60,118	8,946	465,844

*As reported to the U.S. Office of Education administrative unit, college libraries are traditionally divided into a public services section (including the circulation and reference functions) and a technical services area (encompassing acquisitions and cataloging responsibilities). Despite varying degrees of coordination due to organizational differences, a great deal of mutual interdependence must exist among all units in the operation of any library.

At Clark, the Librarian has direct authority over an Assistant to the Librarian and the Curator of Special Collections, as well as over the supervising personnel in the circulation, reference, acquisitions, and cataloging areas. Although a recent Library Task Force Study recommended the creation of a single position to coordinate the technical services, no action has been taken on the matter as yet.

The Librarian at Holy Cross supervises, in addition to the four basic areas of circulation, reference, acquisitions, and cataloging, a separate Serials Division (including Audio-visuals), a Rare Books Division, and the O'Callahan Science Library. Although the technical processing of materials for the latter is done in the Dinand Library, the Science Library is housed in a separate location and operates its own circulation and reference services.

WPI's library organization differs most from those of Clark and Holy Cross in that the heads of technical services and of public services, under whom are subsumed all the other categories of service functions, report directly to the Librarian. The four librarians on Tech's reference staff form the greatest concentration of professionals in any department among the three libraries.

At each library, a committee composed of faculty and

TABLE 2

TRI-COLLEGE LIBRARIES STAFF STRUCTURE*

	Clark University	Holy Cross	WPI
Administration	Board of Trustees President Dean of Academic Affairs University Librarian Assistant to the Librarian Secretary (University Archivist) (Library Committee)	Board of Trustees President Dean of Faculty, V.P. Librarian Secretary (Archivist) (Library Committee)	Board of Trustees President Dean of the College Head Librarian Secretary (Faculty Advisory Library Committee)
Technical Services	Catalog Librarian 4-1/2 Support Staff	Head Cataloger Assistant Cataloger 3 Support Staff	Head, Technical Services Cataloging, 2 Support Staff
	Order Unit, 2 Support Staff	Acquisitions Librarian 1-1/2 Support Staff	Acquisitions, 2 Support Staff
	Serials Unit 1-1/2 Support Staff	Periodicals Librarian Audio-visuals, 1 Supp.Staff	Serials 2 Support Staff
Public Services	Reference Librarian Assistant Reference Librarian 1 Support Staff	Reference/ILL Librarian 2 Support Staff	Head, Public Services ILL/Reference Librarian Bibliographer/Reference Librarian Technical Reports/Reference Librarian
	Circulation Librarian 3-1/2 Support Staff	Circulation Librarian (position open) 5 part-time support staff Reserve Librarian	Circulation/AV 3 support staff
		Science Librarian	Special Collections Librarian
Other	Curator, Special Collections 1 Support Staff	Curator of Manuscripts	

*Student assistants are not included

student representatives meets more or less regularly (Clark, five or six times a year; Holy Cross, monthly; and WPI, four times a year) with the library administration to serve in an advisory capacity.

Table 2, Tri-College Libraries Staff Structure, displays the present distribution of professional and support staff at the three libraries for comparative purposes.

Public Services: Circulation

The public services division of a library is probably the area of most contact and hence, greatest familiarity, for the library patron. The circulation department, e.g., handles the charging out and discharging of materials, the maintenance of records on the location status of items in the collection, shelving and maintenance of the collection itself, and the keeping of statistics on library building use and collection use.

Although all three library buildings are open for use by anyone, the policies of each limit the withdrawal of material for home use to their respective faculties, students and staffs. Special borrowing privileges are also extended to alumni and serious scholars by the libraries; in addition, Holy Cross allows all local clergy borrowing privileges at its facilities. Under a cooperative agreement, all faculty may obtain open borrowing privileges at any of the tri-college libraries, upon presentation of their consortium cards. Although students who are cross-registered at another tri-college institution have direct borrowing privileges at that library, other students may obtain interlibrary materials only through the interlibrary loan system at their own library.

Loan periods and policies vary at the three libraries: at Clark, most student users may borrow materials for two weeks, while graduate students and upperclassmen registered in honors courses have semester loan privileges, subject to recall when necessary. Faculty members are allowed indefinite loans, also subject to recall. Reference materials, theses, dissertations, and rare books are not loaned out; journals may only circulate for three days without renewals.

Holy Cross allows students two-week charges, and faculty, unlimited charges subject to recall. Although reference materials and rare books are non-circulating, journals may be charged out by faculty members.

At WPI, books may be charged out to non-faculty users for three-week periods; faculty members have seven-week charges. Reference materials, rare books, and journals may not circulate outside the building at all; theses and dissertations do so on occasion.

Minor variations exist in the mechanics of circulation at the tri-college libraries. The Clark and WPI systems, e.g., require an embossed student identification card for imprinting the borrower's name, while Holy Cross stamps the student's library card each time an item is checked out or returned.

The operation of the reserve collection falls within the purview of the circulation departments at Clark and WPI, but at Holy Cross, it is under the direct supervision of the Librarian. Slight differences exist as well in their loan periods. Clark and WPI have primarily two-hour reserves; Holy Cross allows unlimited use within the building.

The fine schedules adhered to by the libraries are similar: basically, five cents per day for general circulation items, twenty-five cents for the first hour and fifty cents thereafter for reserve material.

Collection maintenance usually encompasses the weeding of inappropriate materials and the taking of inventories to ascertain the collection status. At Clark, no formal weeding policy exists, though a certain amount of basic weeding is performed by the Librarian. No recent inventories have been undertaken at Clark on a regular basis.

Although Holy Cross has no regular weeding procedures either, weeding was most recently accomplished last summer by faculty members in their respective fields of interest. Up to the late 1960s, annual inventories were taken by the Catalog Department but have been discontinued due to lack of staff time.

For the past three years, an inventory has been taken each summer by the WPI circulation department. Limited weeding of the collection in conjunction with the inventory has been handled by the head of technical services, although no formal weeding policy exists.

All three circulation departments support the work of their libraries' ordering unit through calling to the latter's attention the need for reordering missing materials and high demand items.

At all three libraries, the responsibility for supervising the maintenance of various types of hardware and equipment normally lies with the circulation departments as well.

The opening and closing of the libraries is also supervised by the circulation departments. During the regular academic year, Clark's Goddard Library is open 104 hours per week, the Dinand Library at Holy Cross is open 106 hours per week, and the Gordon Library at WPI is open 95 hours per week.

Finally, at Clark, the circulation department also provides assistance in the use of the nearby card catalog, a function of the reference department at Holy Cross and WPI.

Public Services: Reference

In the larger academic libraries, the diversity and depth of specialized collections often requires reference librarians with subject background proficiencies that can enable them to provide maximum services to the users. In smaller libraries, such as the three surveyed here, this need is not as critical. Clark, e.g., has a general reference librarian and an assistant reference librarian whose hours of duty on the desk are staggered to provide 56 hours a week of professional help to patrons.

At Holy Cross, there is a librarian at the Science Library who does offer assistance within a subject specialty, as well as a Periodicals Librarian for serials reference help. In the Dinand Library, professionals are available 35 hours a week at the reference desk.

WPI's strength in technical holdings is reflected in the presence of a Technical Reports Librarian on their public services staff. At the general reference desk, professional assistance is available 86 hours a week. Only at WPI does the technical services staff have formal public services duties as well; the head of technical services is scheduled to work two afternoons a week at the reference desk.

At all three libraries, interlibrary loan activities are handled by the reference departments. Their use of TWX terminals allows the greater extension of potential resources available to users; however, only the WPI terminal has the capacity for direct access to national library resources. Table 3, Interlibrary Loans Among Tri-College Libraries, 1975/76, shows interlibrary loan patterns not only among Clark, Holy Cross, and WPI, but to and from other libraries in the Worcester Area Cooperative Libraries (WACL) and outside WACL as well. It can be seen that well over half of the tri-college libraries' loan traffic is with libraries within WACL.

Although none of the libraries provide formal courses of library instruction, Clark offers orientation tours in September for all users, and its reference personnel deliver lectures to individual classes at the request of the faculty. Holy Cross also has orientation tours for all new students as well as tours tailored to the needs of specific classes, as requested by the faculty. At WPI, library tours for students and faculty are available on demand.

An added responsibility of the reference department at Clark is that of supervising bindery preparations, which falls under the cataloging department at Holy Cross (except for Science Library Materials, handled by the Science Librarian), and under Technical Services at WPI.

Technical Services: Acquisitions

Often the functions in the acquisitions and cataloging divisions are divided by the type of material, i.e., whether one-time monographic publications or on-going serial publications. Evidence of this bifurcation is apparent in varying degrees at all three libraries. At Clark, all types of materials are ordered by a single order unit, but monographs and serials are funneled into different channels at the receiving, or checking-in stage.

The difference is even more marked at Holy Cross

TABLE 3

INTERLIBRARY LOANS AMONG TRI-COLLEGE LIBRARIES, 1975/76*
(INCLUDES VOLUMES AND PHOTOCOPIES)

		FROM						
		Clark	Holy Cross	WPI	Other WACL	Outside WACL		Totals Borrowed
TO	Clark		657	188	562	504		1,911
	Holy Cross	833		103	381	602		1,919
	WPI	643	370		507	710		2,227
	Other WACL	898	729	189				
	Outside WACL	514	139	168				
	Totals Lent	2,888	1,895	648				

*As reported by lending libraries.

where a professional Periodicals Librarian, distinct in location, both physically within the library building and in organizational hierarchy, supervises the entire technical processing (other than cataloging) of serial publications, from ordering to accounting to binding, while an Acquisitions Librarian performs parallel functions for all non-serial publications.

A similar division by material exists at WPI, although the activities of both are coordinated under the Technical Services Librarian. Furthermore, technical reports are ordered and processed separately as well, by the Technical Reports Librarian.

In an academic library, the development of a library collection depends largely upon the orientation of the academic program of the institution served and the availability of funds for materials. Clark, which was originally established as a graduate institution that only later acquired an undergraduate component, has retained a research approach to its collection building. On the other hand, Holy Cross, with its single graduate program in chemistry, has largely a teaching collection. No written acquisitions policy statements exist for these two libraries. WPI, hitherto dedicated primarily to science and engineering, recently broadened its collection building responsibilities when it instituted a new plan of study incorporating a humanities component. This is reflected in its 1976 written acquisitions policy stating: "The primary emphasis of the library must remain in the Science and Engineering fields with strong secondary support in the Social Sciences and Humanities."

Faculty members at all three schools are largely responsible for collection development by originating order requests for materials in their academic areas. At all three, this is supplemented by library staff suggestions, with WPI assigning formal selection responsibility to four members of the professional staff. Students at all three places are allowed to make suggestions concerning order requests, although no formal procedures incorporate their role in the selection process.

The library materials budgets impose limitations on the amount of materials purchased, and all three institutions make budget allocations to the various academic departments on campus for non-serial publications, with portions reserved for library staff spending. A separate allocation not divided among departments is made by each library for serial publications. At all three, further sources of income include various endowment funds, trust funds, Title II-A grants, and occasional departmental grants which include library components.

After order requests are submitted, four basic activities take place: verification, ordering, receiving, and accounting. The first ensures that an order is indeed bibliographically accurate and that at least an estimated price is established for the item. With the advent of access to the national Ohio College Library Center (OCLC) data base, the verification procedures at Clark and WPI incorporate an OCLC search. Materials (including books, certain non-print items, and serials) found in the data base are so indicated at this point to facilitate later cataloging processes.

A variety of vendors are used for monographic and non-print materials by the three order units, based on individual needs and past experience. Slightly more overlap in choice of vendor exists between Clark and Holy Cross than between either of them and WPI. Furthermore, the placement by all three of hundreds of standing orders facilitates the acquisition of items, often monographic, in a series, all of which are desired but which may appear at irregular intervals. Variation exists as well among the jobbers used for serial subscriptions, all of whom are established firms with national reputations: Clark uses the services of the Moore-Cottrell Subscription Agency and Stechert-Macmillan for most of its 2,369 subscriptions. Holy Cross' 1,700 subscriptions are placed through Faxon if direct orders are not required, and WPI's 1,168 serials are supplied primarily by Faxon, Stechert-Macmillan, and Ebsco.

From the time an item is ordered to its receipt by the acquisitions division, records must be maintained of its status--what was ordered, when and from whom, whether it should be claimed if overdue, how much it actually cost, and whether the invoice has been paid. Although the same functions are performed at all three libraries, differences in format appear throughout, e.g., in printed forms for order requests, multiple order forms, and work forms. Processing differences also occur among the three, e.g., Clark maintains on order files by main entry and academic department, while Holy Cross' on order files are accessed by title, vendor, and department, and WPI keeps files by title, fund, and purchase order number.

Bookkeeping functions within each library are performed manually and include the encumbering of estimated prices before ordering, disencumbering after receipt and replacing them with actual costs to be paid, and vouchering invoices for payment through the college business office. However, at Clark, these duties are handled by the Assistant to the Librarian, while at Holy Cross and WPI they are performed by support staff in the appropriate area (i.e., in acquisitions and serials at Holy Cross, and in technical services at WPI). The Clark library sends budget balances information to its academic departments approximately four times a year. At Holy Cross and WPI, department balance statements are disseminated to the faculty each month.

Technical Services: Cataloging

The cataloging of library materials, like Wiener's "negative entropy," provides order to potential chaos by fitting materials into predefined schemes of knowledge for ready retrieval and use.

Access to and participation in the production of the OCLC on-line data base is probably the most dramatic change experienced by the three cataloging departments in recent years. At all three libraries, items to be cataloged are searched first on the OCLC terminals to take advantage of shared cataloging if an acceptable cataloging record has already been input in the data base. This is done by the support staff at Holy Cross and WPI, allowing the catalog librarians to devote more of their time to the creation of original cataloging records for items not found in OCLC. At Clark, support staff do original cataloging as well, subject to the catalog librarian's revision. Special procedures include the cataloging of selected technical reports by the Technical Reports Librarian at WPI. The inputting of records into the data base is done at all three schools by support staff as well, with final revisions made by the librarians before the record is sent and cards produced for filing into the local card catalogs.

The classification scheme used at Holy Cross and WPI is the Library of Congress system. Clark now uses the Library of Congress system as well for the majority of its collection, having reclassified almost three-fourths of its retrospective collection from an older system unique to the university. The remainder of Clark's reclassification is projected to take several more years to complete; some conflicts between the two schemes are yet to be resolved.

Records of each library's holdings can thus be found in three types of files whose production and maintenance is the responsibility of the cataloging or technical services departments. First, the OCLC terminal provides access by main entry (e.g., a personal author), title, a combination of the two, the Library of Congress card number, and an international standard number for each item for which the local holding record has been input. Ideally, for the tri-college libraries this should include all books cataloged since 1973 for Holy Cross and WPI, and since 1974 for Clark. Only in 1976 was access to serials available on OCLC and for non-print materials, only since January 1977. Local differences exist, however, in the extent of OCLC use. At Clark, e.g., none of the reclassified material has been input onto the OCLC data base. Currently Clark and WPI add serials holdings information to the data base, but Holy Cross does not. Original cataloging of audio-visual materials is not yet being fully input onto OCLC.

The more traditional public card catalog, arranged in dictionary format at all three libraries, is the most comprehensive file, with at the least, access by main entry, title, and subject headings to all books and periodicals in the library collections, including those on OCLC.

The third file, not normally used by the public, is the shelf-list which allows access to material by its call number in classification scheme order.

Special catalogs exist at the libraries as well. At Clark, e.g., these include catalogs of the circulating record collections, theses, and dissertations, rare books and microforms. Records of WPI's music scores, theses and dissertations are filed separately and not incorporated into the public catalog. The majority of its technical report collection is accessible through government or other indexes. Holy Cross'

Dinand Library card catalog provides access to the Science Library collection as well.

After the content of a book is cataloged, it is physically prepared for public use through labelling, being provided with pockets for cards, etc. by support staff members at each library. At Clark, the additional step of inserting tattle-tape strips for use with the 3M detection system is also included here.

Next, materials are routed to their respective locations both inside and outside the central libraries for public use. At Clark, e.g., chemistry periodicals are kept at the Kraus Library in the Jeppson Laboratory. Holy Cross' science materials are sent to the O'Callahan Science Library, and the Physical Education Department and Alden Research Laboratories comprise locations for materials outside WPI's Gordon Library.

Bindery preparations, as supervised by technical services personnel at Holy Cross and WPI, and by reference at Clark, include light repair work on-site and sending larger jobs to a local bindery; the Wesby Company.

Finally, a monthly accessions list of newly cataloged books and periodicals is produced at Clark; offset copies are then circulated to each Clark faculty member, some administration officials, eight of the WACL members, and to the local Norton Company. The dissemination of accessions lists to their own faculty and local libraries was discontinued by Holy Cross due to cost. WPI's reference staff sends monthly lists of selected accessions to its faculty and each library on the WACL mail shuttle route.

Other Services

Special mention should be made of other services available at the tri-college libraries. One of these is the audio-visual facilities at each. The most extensive collection, at WPI, is housed in the audio-visual room and comprises not only radio cassettes, super 8 mm. film loops, and multi-media instruction kits, but also a substantial number of locally-produced video tapes for the Individually Prescribed Instruction program. Holy Cross also has a special audio-visual room equipped for the use of its microtext, cassette, and video tape collections. At Clark, audio-visual materials in the library are limited to records, tape cassettes and microtexts.

Another resource at the three schools is the archive collection of material relating to the history of each institution. Although housed in their respective libraries, the archives are variously administered by personnel within and outside the library organizational structure. At Clark and Holy Cross, e.g., the archivists are faculty members who are not responsible to the librarians, while at WPI the archives are included in the special collections division, staffed by a librarian.

Mention has already been made of the rare books collections at the three schools. At Clark, these are housed in the Wilson Rare Book Room under the direction of a full-time curator. Holy Cross' special collections include collections of incunabula, early sixteenth and seventeenth century Jesuitana, manuscripts, etc., housed in separate rooms throughout the library. Their supervision comes directly under the Librarian. The special collections division of WPI falls under the Public Services Division.

Cooperative Activities

As can be seen, although the basic functions and purposes of library operations at Clark, Holy Cross, and WPI are similar, local variations exist in almost all phases. Brief references have been made throughout, however, of cooperative services already in practice; these are apparent at three levels. First, as members of the Worcester Consortium for Higher Education (WCHE), Clark, Holy Cross, and WPI take part in faculty exchange programs and student cross-registration programs, among other activities. On the library level, these are supported by the extension of borrowing privileges to consortium faculty and cross-registered students. The three institutions also benefit from the consortium shuttle bus service which provides personnel transportation among WCHE member institutions. The tri-colleges themselves are geographically situated roughly at the points of a triangle, with distances of approximately two miles between Clark and WPI, and Clark and Holy Cross, and three miles from WPI to Holy Cross.

The libraries of the three institutions also participate in the Worcester Area Cooperating Libraries (WACL), established in 1967 under the aegis of WCHE. The achievements of this fourteen-member consortium include the compilation in 1970 of a union list of serials (currently undergoing updating) and the operation of an intra-WACL shuttle service providing twenty-four-hour delivery of consortium loan items and mail. A WACL union list of non-print materials is yet to be completed. WACL also initiated tri-college participation in cooperative library activities on a national scale through its combined membership in NELINET (providing access to OCLC through the New England Library Network) and through its introduction of TWX terminals for interlibrary loans. Among the local studies sponsored by WACL in the past are surveys on interlibrary loan reimbursement, member library acquisitions by type and subject, and the feasibility of joint computer-assisted acquisitions and circulation systems.

Through WACL grant monies, several of the member institutions have purchased both microfilm and audio-visual equipment for library use.

Finally, among the three libraries in particular, cooperative ventures to date include the joint study in 1973 of science journal duplication, which resulted in an annual savings of approximately $10,000 in cancelled subscriptions. Preliminary efforts at assigning areas of collection development responsibility were begun recently but so far have been unproductive and have by and large ceased. Overall, however, a significant degree of interlibrary cooperation already exists among Clark, Holy Cross, and WPI.

STUDY C

DUPLICATION IN MONOGRAPH HOLDINGS

One potential source of savings in a library consortium lies in the elimination of unnecessary duplication from the book collections of the participating institutions. It is very important in considering this subject to stress the adjective "unnecessary," because some duplication, even within single libraries, is absolutely essential to the delivery of good service. In fact, there is a growing body of belief among academic librarians that, in collections designed primarily to serve teaching rather than research programs, most institutions would probably enhance their service by increasing rather than reducing the incidence of duplication. Linear programming techniques have recently been brought to bear upon this matter and some limited certainties have been identified as to optimal levels of duplication, but for the most part, judgments as to requisite duplication must remain subjective into the near future.

Objective analysis then can be made of the amount of duplication, but only subjective analysis can be made of its nature. This study attempts to develop these two kinds of bases for recommendation regarding the duplication of monographic materials among the three libraries. Since substantial attention was recently devoted to journal duplication by the faculties and library staffs of the three institutions, with resulting reduction in its incidence, the surveyors felt it would be more fruitful to concentrate their efforts upon the duplication of books.

Incidence of Monograph Duplication

In order to determine the amount of monograph duplication in the collections of the three libraries, a random sample of 384 titles was drawn from the shelf-lists of each institution. Such a sample size will render a 95 percent confidence level, and a tolerance of 5 percent. Each sample was then searched against the catalogs of the other two institutions, and holdings were noted. The processes used for the study are attached hereto as Appendix A.

Overall the study indicates that slightly more than half of WPI's monographs are held uniquely in that library, whereas the level of uniqueness in the other two libraries approaches two-thirds. Among recent titles, however (e.g., those published in the last decade), a reversal occurs in this ratio, with Clark and Holy Cross holdings running a little better than half unique and Tech's incidence of uniqueness approaching two-thirds. These percentages are shown as Table 1.

TABLE 1

Percentage of Monographs Not Held Elsewhere

	Total Holdings	Recent Imprints*
Clark University	62.5%	55.0%
Holy Cross	66.1%	56.2%
WPI	52.1%	63.0%
Tri-College Totals	60.2%	58.7%

*1968-77

Clark and Holy Cross, perhaps understandably, tend to duplicate one another's recent titles considerably more frequently (in excess of one-third of the time) than their recent monographs are duplicated by WPI. See Table 2.

TABLE 2

Percent and Location of Duplicates (Recent Imprints)

	Duplicated at		
Holdings of	Clark	Holy Cross	WPI
Clark		36.7%	18.3%
Holy Cross	36.0%		19.1%
WPI	18.5%	27.4%	

The 384-title samples from the three libraries were also checked for triplication; that is, for books that were held in all three institutions. Here it was found that one in every 6.45 monographs held in each library is also owned by both of the other two. Much of this triplication, however, seems to exist in the older, retrospective collections. Among titles published since 1967, only one in ten is triplicated. Table 3 summarizes the percentage of uniqueness, duplication, and triplication of the recent monographs acquired by the three libraries.

TABLE 3

Recent Monographs (1968-1977) in Tri-College Libraries

	Unique Holdings	Held by at Least One Other Library	Held by Both Other Libraries
Clark	55.0%	45.0%	10.1%
Holy Cross	56.2%	43.8%	11.2%
WPI	63.0%	37.0%	8.9%
Totals	58.7%	41.3%	9.9%

Nature of Monographs Duplicated

There are probably few, if any, surprises in these several sets of figures. They seem rather closely to reflect ratios which most persons acquainted with the histories and academic offerings of the three institutions would probably have been able to predict. Duplication would be expected where the institutions have academic programs in common: uniqueness would occur where academic programs are complementary. There is a good bit of both in the tri-college group.

A review of the titles and authors of the books duplicated permits some useful observations to be made about them. First, not all of the titles duplicated are the result of duplicate purchase; some were gifts. Records were not uniformly available as to which were gifts and which were purchases, however, so no statistical breakdown is possible here. Second, some of the titles duplicated are general reference works which would have to be available in any respectable academic library reference collection anywhere. Third, some are government documents which appear to have been deposited in the libraries by their respective publishing agencies. These three factors might be viewed as reducing the gross duplication shown in the foregoing tables to a considerably lesser figure reflecting net discretionary duplication, or duplication against which judgment could have been, or was, applied.

What of the residual discretionary duplication? Is it reasonable, or is it excessive? High, or low? Unfortunately these questions are not susceptible to easy answer. Studies of duplication among libraries have been very rare indeed, so there are no norms or standards against which a consortium can compare itself. For purposes solely of comparison--because it cannot be taken as right or wrong, good or bad--figures are given in Table 4 for a somewhat similar analysis (of monograph duplication although not triplication) made three years ago by the libraries of the Five Colleges in the Amherst area. The uniquenesses, commonalities, vagaries, and histories of

TABLE 4

Percent and Location of Recent Duplicates
(Five Colleges, Massachusetts)

Holdings of	Amherst	Hampshire	Mt. Holyoke	Smith	U. Mass.
Amherst		15%	27%	27%	79%
Hampshire	34%		30%	43%	80%
Mt. Holyoke	37%	12%		32%	71%
Smith	42%	13%	37%		71%
U. Mass.	21%	12%	16%	23%	

those five parent institutions must provide the backdrop for those figures, just as duplication in Worcester can be viewed only in a tri-college setting.

One might look at tri-college duplication from three different vantage points: (1) by reviewing the specific titles duplicated for relevancy to the programs on their respective campuses; (2) by reviewing the incidence of actual use of duplicated titles in their several locations; and (3) by comparing the incidences of discretionary duplication against the difficulties of reducing it. The balance of this section will discuss these three topics seriatim.

Relevancy to Program

It is difficult if possible at all for someone from outside a particular institution to determine the relevancy of a book to the program of that institution. This is why college libraries select their books internally in the first place, rather than contracting for selection with a remote service bureau. Library staff members and some members of the teaching faculties of the three institutions may wish to study the specific titles held by their libraries in duplication of others in the tri-college group to make their own determinations of relevancy. For this purpose the records of duplicated titles were deposited by the study team in the Goddard Library office, where they remain available for review. A small selection from among them--recent books triplicated in the libraries and therefore presumed to be of considerably higher importance than the books duplicated--is for quick review attached to this report as Appendix B. The surveyors read the entire list of titles duplicated and triplicated and found very few for which they could conceive no program-based rationalization, although their limited acquaintance of the three teaching and research programs could doubtless have led them into substantial error. They defer to better judgments within the three institutions.

Use of Duplicated Titles

Only a very small selection of duplicated books, and that not truly random, was checked for actual use in the three libraries, so no statistical validity is claimed for the results. Perhaps, however, the results can be viewed as indicators. The selection comprised all of the recent titles (1968-1977) from the three shelf-list samples which found themselves triplicated in the tri-college libraries. The list, thirty-four titles in all, is shown in Appendix B, together with their circulation experience, to the extent that circulation records were available. Five of the thirty-four had served as Reserve books in one or more library, and one title was in Reference; these six at least would seem easily to warrant triplication. Seven others had been charged out a total of nine or more times, a figure that again might well justify triplication. It will be a bit disturbing to some, however, to note that nine of the twenty-eight triplicated titles for which complete circulation records could be determined had circulated three or fewer times total. In other words, one-third of the triplicated recent copies had circulated one time or less in their lifetimes in the tri-college libraries.

It is dangerous to extrapolate from such a shaky factual base, but a general order of magnitude can be ascertained here nonetheless. If these figures reflect actual experience, for example, one could say that, of the some $150,000 spent annually by the libraries for monographs, 10 percent (or $15,000) is spent on titles destined to be triplicated, but of which one-third ($5,000 worth) will be used so seldom that a single copy would suffice (e.g., save two-thirds, or $3,333). If it should prove further that one-third of the 30 percent duplication could also be foregone, that could represent an additional potential savings of $7,500 (e.g., one-half of $\frac{.30 \cdot \$150,000}{3}$). These calculations indicate a potential savings from the elimination of presumably unnecessary monograph duplication of some $3,600 per library per year.

Or do they? In the first place, they are based entirely upon the circulation of the book rather than upon its actual use. Records are made only when a book is charged out, and books in open-stack libraries are obviously used inside their buildings as well as out. Unfortunately, there is no way known to the surveyors for assessing unrecorded in-building traffic against a book; we must simply recognize that to eliminate all of the triplication which did not appear necessary in terms of circulation would doubtless diminish the effectiveness of the library in some indeterminable, although probably limited amount. In the second place, it is not at all certain that colleges anywhere have the capability of predicting with any better accuracy than the above figures demonstrate just which books will see highest use. It is one of the frustrating inscrutables of collection development that--even with the best of selection expertise--some titles seemingly assured of an extensive readership languish untouched while others of limited attractiveness are read to pieces. In the third place, the establishment of a process for reducing unnecessary duplication, assuming that such duplication can be identified, would have some costs attached.

Processes for Reducing Duplication

The three libraries have been using some rudimentary methods of keeping down duplication in their collections, including keeping each other informed of broad collection development policy, checking with each other before purchasing expensive items, and reviewing the need for multiple journal subscriptions with appropriate members of their faculties. These are low-cost processes with the likelihood also of low return. In fact, the practice of checking expensive purchases appears to have fallen into desuetude, apparently because the libraries were not buying enough expensive items in the first place to warrant maintenance of the process. It was just one more thing to remember.

To go beyond these simple steps would require a process to assure that potential duplication surfaces automatically prior to the determination to purchase. This could be accomplished in two ways. First would be for each library to search each candidate for monograph order not only in its own records but also against the holdings and on-order files of the other two libraries, making an individual considered judgment whether or not to buy if it was determined that the volume was already in, or en route to, the tri-college community. To do this would obviously triple the cost of searching. The second possible process would be to develop a single order department, single catalog of holdings, and single on-order record for the tri-college community. This would also entail some costs, psychological and political as well as monetary. Both the first and second process would substantially involve the teaching faculties. Since about 90 percent of all monograph selection in the three institutions is now done by faculty members, it is assumed that when, in either process, it were determined that a selected title would be a tri-college duplicate, the initiator of the selection would be apprised of that fact and his advice sought as to whether or not to buy, duplication notwithstanding. Faculty time is not cheap.

Summary

In summary, the study indicates that some unnecessary duplication exists in the current monograph acquisitions of the three libraries--perhaps amounting to a dollar total in the upper four figures annually. Processes could be devised for reducing this unnecessary duplication somewhat, but at a cost! It appears problematic whether or not the prospects for savings in this area warrant the cost.

STUDY D

FACULTY LIBRARY USE SURVEY

Problem

In response to a specific charge in the proposal to the Carnegie Corporation by the tri-colleges for a study of user attitudes on the three campuses towards their respective libraries, a survey was made to investigate the parameters of faculty use of the libraries at Clark, Holy Cross, and WPI. The faculty was selected for the study because of its role as one of the primary library user groups in an academic community.

Because of the limited time period in which this survey was undertaken, its objectives were mainly descriptive, viz., to determine:

1) the extent of present use of each library by its own faculty and by faculty of the other two institutions;

2) faculty evaluations of the libraries of their own and the other two institutions;

3) the level of faculty usage of current interlibrary services.

4) faculty evaluation of current interlibrary cooperative services.

Study Methodology

The sampling frame used in sample selection was the faculty roster found in each college's catalog for the current academic year. From these were excluded all non-teaching faculty (e.g., librarians, administrators, adjunct personnel), all non-full-time faculty (e.g., affiliate personnel), and all non-permanent faculty (e.g., visiting professors). Thus the population was composed of all full-time teaching faculty at Clark (a total of 152), Holy Cross (156), and WPI (176), comprising a total of 474. Because of the relative homogeneity of the population and the restrictions on time, a 25 percent simple random sample of the full-time teaching faculty at each institution was selected to receive a mail questionnaire (38 from Clark, 39 from Holy Cross, and 44 from WPI).

The questionnaire (see sample form in Appendix C) consisted of thirty questions in the areas of personal background, library use, library evaluation, present status of library cooperation, and comments. Although its length was necessarily increased by the fact that one form was to be used at all three institutions and hence, each item had to accommodate answers from any of the tri-college faculty, a check-list response format was designed to require a minimum of writing effort on the part of the respondent.

Members of the sample were assured of questionnaire confidentiality, although form coding allowed a record to be kept of non-respondents. Two weeks after the date of receipt of the original questionnaire by members of the sample, a follow-up letter and second copy of the questionnaire were sent to those whose responses had not yet been received. One week later, telephone calls requesting form completion and return were made by the staff at each library to the remaining non-respondents in their respective institutions.

The response rates for the three schools were varied:

from Clark, 25 usable responses out of 38, or 66 percent were returned. The highest response rate came from the Holy Cross faculty, who returned 82 percent (or 32 out of 39) of the questionnaires. WPI produced a 68 percent response rate, or 30 out of 44 questionnaires. This resulted in a 72 percent overall return rate for the 87 responses received out of 121 questionnaires sent.

After the responses were coded, they were keypunched and checked for accuracy. The SPSS subprogram Frequencies was then run on the data to compute the desired descriptive statistics for each institution individually as well as for all three schools together.

Results

A great deal of information of potential interest to the study of faculty library use was generated; however, not all the results were strictly relevant to the objectives of this study. This discussion will therefore cover selected items in the questionnaire, supplemented by tabulations for those responses in Appendix D. Although the complete set of data tabulations is not given in this report, it is available for those wishing to pursue the matter.

Data dealing with the personal backgrounds of the faculty showed that, on the whole, full professors, associate professors, and assistant professors comprised the majority of the respondents (34.5 percent, 32.2 percent, and 27.6 percent, respectively), with 31 percent of the total having spent eleven to twenty years at their respective institutions already. The departmental affiliations of the respondents from the three schools reflected the academic orientations of each institution: 44 percent of all Clark's respondents were in the social sciences, 37.5 percent of Holy Cross' respondents were in the humanities, and 53.3 percent of WPI faculty were in the applied sciences.

Only two members of the entire sample had participated in the faculty exchange programs; 97.7 percent had not. A few more (8.1 percent) had taken part in tri-college faculty research projects, but again, the large majority (91.9 percent) had not.

The responses to the questions concerning frequency of use of the tri-college libraries showed a high incidence of use of the library of the faculty member's own institution. At Clark, 69.6 percent said they used their own library once a week or more; 76.7 percent at Holy Cross and 78.5 percent at WPI claimed the same high level of usage of their libraries. Although Clark faculty did not indicate frequent use of the Holy Cross and WPI libraries (76 percent and 84 percent respectively, said they had not used these libraries during the past academic year), both Holy Cross and WPI faculty had made use of the Goddard Library. Only 29 percent of Holy Cross faculty and 57.1 percent of WPI respondents said they had never used Clark's library.

In item II.2, an attempt was made to discover the reasons for not using a tri-college library. In all cases, the most frequent reply was that it was not necessary for one's field.

Next the faculty were asked to select from among a variety of activities the ones for which they most often went to the library. The responses for purpose of use of their own library facilities showed that Clark faculty made the greatest use of Goddard Library for circulation purposes (checking out or returning materials), for use of the photocopying facilities, and for library research for publishable works. Holy Cross faculty indicated greatest use of their library for circulation purposes, for browsing in the professional literature, and for using the bibliographical tools. Faculty at WPI also used their own library most frequently for circulation purposes, followed by use of bibliographical tools and doing library research for teaching.

The type of material used most frequently by faculty at all three libraries was scholarly journals; 89.1 percent of all respondents said they used the Clark library for scholarly journals, 72.5 percent used the Holy Cross library, and 87.2 percent the WPI library, for the same. This was followed by research books and reference books as popular categories for use at all three libraries.

Faculty perceptions of their own familiarity with the tri-college library collections are seen in the tabulations for item II.5. For all three libraries, the majority of their own faculty said they knew the collections thoroughly or well. Thirty-three percent of the Clark faculty knew their collections thoroughly, and 47.6 percent knew them well. At Holy Cross and WPI, even more (48.3 percent at Holy Cross and 50 percent at WPI) felt they were thoroughly familiar with their collections, with an additional 34.5 percent and 36.7 percent, respectively, who knew them well. As for familiarity with the other tri-college libraries, the majority of Clark and WPI faculty said they were not at all familiar with the collections of the other two institutions. In contrast to this, 33.3 percent of the Holy Cross faculty claimed to know the Goddard collection either thoroughly or well, although most (84 percent) said they were only slightly or not at all familiar with the WPI collections.

As a measure of expectation rate among the faculty, the next question asked how often, when going to the library of the user's own institution for a specific item, one expected to leave with the item in hand. The responses from Holy Cross showed the highest expectation rate: 13.3 percent said "always" and 63.3 percent said "frequently." At WPI, the majority (86.7 percent) said they frequently expected to find specific items, while at Clark, 44 percent said "frequently," and another 44 percent, "sometimes."

Responses to a question identifying resources used by faculty showed that, when a desired item is not in the library of their own institution, they do not necessarily try the other tri-college libraries next. Most Clark respondents said they would try libraries outside Worcester or non tri-college libraries in Worcester next for needed items (see II.7, d and e, for a breakdown of specific libraries cited). Holy Cross users did select the Goddard Library as the place they would normally try next, followed closely by other libraries in Worcester in general. Most faculty members at WPI said they would normally try libraries outside Worcester next, with a heavy emphasis on the resources at M.I.T. The library in Worcester most frequently listed was the Worcester Public Library.

When asked their reasons for going to another tri-college library instead of using the facilities of their own institution, the Clark faculty responded with no single salient reason. At Holy Cross and WPI, however, the reason given for use of other tri-libraries was the better collection at each.

Faculty at Clark and WPI who used other tri-college libraries tended to prefer the use of the interlibrary loan shuttle delivery service to personal visits or sending a friend; most of the Holy Cross faculty said they preferred personal visits.

Both Holy Cross and WPI faculty indicated that their library needs were either completely or adequately satisfied at the Clark library, whereas most Clark faculty found that the Holy Cross and WPI libraries only somewhat or rarely met their needs. Most Holy Cross faculty using the WPI library were completely or adequately satisfied with it; the few (26.9 percent) WPI faculty who used the Holy Cross library were closely divided between those completely or adequately satisfied, and those somewhat or rarely satisfied. As for extent of satisfaction with their own libraries, the highest rate came from the Holy Cross faculty, 92.3 percent of whom were completely or adequately satisfied, followed by 80 percent at WPI, and 30 percent at Clark. Forty percent of Clark faculty said they were somewhat or rarely satisfied. It should be noted here, however, that the high incidence of missing responses regarding satisfaction with one's own library suggests a misconception that the question dealt with other tri-college libraries; hence the percentages given above are based only on a small number of responses.

The next series of questions investigated the role of the tri-college faculty in encouraging student use of the libraries. At all three institutions, the majority of the faculty (Clark 81.8 percent, Holy Cross 96.7 percent, WPI 86.7 percent) said their courses were organized to encourage student use of their own libraries. Item II.12 shows that 61.9 percent of Clark faculty, 50 percent at Holy Cross, and 42.9 percent at WPI encouraged this library use about once a week. Few, however, encouraged their students to use the other two tri-college libraries. Among them, WPI faculty encouraged outside library use the most: 26.9 percent organized courses to include use of Clark's library; and 16.7 percent, Holy Cross' library.

At Holy Cross and WPI, 87.1 percent and 86.2 percent, respectively, of the faculty believed that their students' library needs were satisfied when they used their own institution's facilities. At Clark, 45.5 percent thought their students were satisfied, while another 45.5 percent felt unsure whether their students' library needs were satisfied or not.

Of the few respondents who said they did not incorporate student use of their own institution's library into their courses, 75 percent at Holy Cross, and 80 percent at WPI indicated that it was because library use was not necessary for their courses. Among the Clark faculty, 50 percent said it was because their library's collection was inadequate in their fields.

In the section dealing with library evaluation, faculty were asked to rate various factors according to their importance in library use. The tabulations for all three schools together show that by far the most highly ranked factor was "quality of collection" (ranked first by 84.5 percent of the tri-college faculty), followed in decreasing order of importance by "helpfulness of library staff," "convenience of access," "hours of opening," "interior physical environment," and "other."

Faculty evaluations of various aspects of their own libraries were obtained in Item III.3. Almost all areas were rated either "very adequate" or "adequate" by the majority of tri-college faculty. At Clark, especially, high ratings went to the physical facilities: 64 percent of Clark faculty rated the interior physical environment "very adequate," and 58.3 percent gave the same rating to the convenience of access. Holy Cross faculty gave the highest rating to their library's circulation policies (80.6 percent "very adequate"), followed by service at circulation desk (70 percent "very adequate"). Similarly, WPI faculty rated their library's circulation policies and services very highly (70 percent "very adequate" for each). Those areas which received the most negative ratings at Clark and WPI were first, quality of the collection in the respondent's field of interest, and second, procedures for adding new materials. At Holy Cross, dissatisfaction was due to physical facilities, with interior physical environment and convenience of access ranking just above quality of collection in negative ratings. It should be pointed out, however, that even in these areas of highest negative ratings, the positive ratings outweighed the negative ones for all categories except for those at Clark.

Four cooperative library services currently in practice at the tri-college libraries were identified in the next section: the Worcester Area Cooperating Libraries (WACL) interlibrary loan shuttle delivery service, the union list of serials held by WACL members, faculty shared library privileges among the tri-college libraries, and interlibrary loan from libraries throughout the country. At Clark and Holy Cross, greatest use had been made of the national interlibrary loan service (73.9 percent, and 71.9 percent, respectively), followed by WACL interlibrary loan service (60 percent, and 64.5 percent, respectively). WPI faculty, on the other hand, used the WACL interlibrary loan more (65.5 percent) than the nationwide service (60 percent). Interpretation of these results must be tempered by the fact, according to librarians at the three libraries, that their faculty often do not know or distinguish between the sources, whether intra-WACL or not, of their interlibrary loan materials.

The union list of serials was used least at Holy Cross (45.2 percent) and WPI (41.4 percent), while only 25 percent of Clark respondents had used the shared library privileges. The relatively low level of usage of the 1970 union list of serials may be due to its outdatedness, while low usage of faculty shared privileges may be explained in part by the fact that use of the WACL shuttle delivery service often eliminates the need to make personal visits to another tri-college library.

The combined figures for frequency of use of these services show that they are not used with great frequency. Only the national interlibrary loan service was used by the majority at the three schools more than once a semester during the past academic year.

Of those who had never used the four services, most had not used the WACL interlibrary loan (70 percent), the union list of serials (50 percent), the faculty privileges (78.1 percent), and national interlibrary loan (66.7 percent) because it was not necessary for them to do so. Another 44.7 percent, however, said they had not used the union list of serials because they were not aware of its existence.

When asked to rate these cooperative services, the tri-college faculty who had used them evinced satisfaction with them. The WACL interlibrary loan was felt to be adequate by 98.1 percent, the union list of serials was rated adequate by 91.4 percent, 89.8 percent thought the shared privileges were adequate, and 84.6 percent, the national interlibrary loan. The greatest dissatisfaction was reported by faculty who felt the national interlibrary loan service was inadequate (13.5 percent).

Finally, a couple of open-ended questions invited comments from the respondents concerning areas in need of greatest improvement and suggestions for improving interlibrary services. Responses to the former were categorized into the areas shown in the tabulations for V.1. At Clark and WPI, the journal holdings and collection in general at each library were thought by their respective faculties to be in need of greatest improvement. Their library's general collection was also of primary concern to Holy Cross faculty, but in equal need of improvement were their physical facilities.

Item V.2 elicited few responses relevant to the topic of improved interlibrary services; most faculty expressed satisfaction with the current status of their libraries. Sample responses from each institution are given in the tabulations.

Summary

A mail questionnaire sent to a 25 percent random sample of the full-time teaching faculty at Clark, Holy Cross and WPI showed the following results regarding tri-college library use.

A high level of usage of the libraries of their own institution was found among the respondents. Much less use was made of one another's libraries; Clark's Goddard Library was more frequently used by faculty of the other two institutions than vice versa. A majority of faculty also indicated that they incorporate student use of their own institutional library into their courses. Little encouragement of student use of other tri-college libraries was found.

Faculty at all three schools rated their own libraries quite highly in all aspects; dissatisfaction tended to be reported primarily with library collection quality and, at Holy Cross, with the physical facilities. Holy Cross faculty, however, displayed the greatest amount of satisfaction with their library and Clark faculty, the least. The latter also felt that the Holy Cross and WPI libraries did not adequately meet their needs, whereas Holy Cross and WPI respondents who had used the Goddard library reported relatively high satisfaction of their library needs there.

Among the cooperative services currently offered by the tri-college libraries, the most highly used ones were the interlibrary loan and shuttle delivery service provided for WACL members, and the nationwide interlibrary loan system. A rather low frequency of use was found, however, of the interlibrary services.

All the cooperative services were rated "adequate" by a majority of the tri-college faculty who had used them. These were, in descending order of adequacy, the WACL interlibrary loan shuttle, the union list of serials, the faculty shared library privileges, and finally, interlibrary loans from libraries throughout the country.

STUDY E

STUDENT LIBRARY USE SURVEY

Problem

A survey of the current tri-college library use patterns of the students at Clark, Holy Cross, and Tech was considered an essential factor in the determination of user attitudes as specified in the Carnegie proposal.

The objectives of the study were to obtain indications of:

1. the degree of student use of the tri-college libraries;
2. the reasons for student use of the three libraries;
3. student attitudes toward and evaluation of the three libraries in their current situation;
4. student attitudes toward increased use of the tri-college libraries.

Study Methodology

Limitations of time--the short period spent on-campus by the surveyors and the conflicting academic calendars of the three institutions--precluded a formal, scientific investigation of a true random sample of Clark, Holy Cross and Tech students. Instead, in order to arrive at some indication of attitudes and perceptions among the student population (consisting of head counts of 2,318 at Clark, 2,603 at Holy Cross, and 2,522 at Tech for 1976-77), personal interviews were conducted with 25 students selected at random on each campus. The only criterion for inclusion was that the student be registered at one of the three institutions. Locations away from the libraries were deliberately chosen for selection of the 75 participants in order to avoid a skewed sample of frequent library users.

The interview schedule consisted of fifteen brief questions, the majority of which required check-list responses to close-ended questions. Three open-ended items were included as well to allow unstructured answers to questions. A copy of the questions asked, and student responses, can be found in Appendix E.

All the interviews were conducted within a one-week period by a single surveyor. Although student reaction to the interviews ranged from indifference to eagerness to participate, a 100 percent completion rate was achieved.

Results

A discussion of the results of this survey must be prefaced with the caveat that statistically reliable inferences generalizable to the entire student population of Clark, Holy Cross, and Tech cannot be made on the basis of a limited nonprobability sampling. The data can only be examined for evidences of trends which could, if the need existed, be subjected to further study; e.g., the frequent reappearance of the same unsolicited complaint would direct attention to that problem as a potential area of investigation.

The first two questions dealt with individual characteristics of the participants; their distribution by class and by academic major is displayed in items 1 and 2 of the data tabulations.

Registration data in items 3 through 6 show that all but 1 of the 75 students were registered at the institutions at which they were interviewed, and 10 students (5 each from Holy Cross and Tech) were or had been cross-registered at 1 of the other tri-college institutions. It is interesting to note in Table 1 (Frequency of Tri-College Library Use by Cross-Registered Students) that, in the few cases surveyed here, cross-registration at another college did not necessarily coincide with high usage of that institution's library.

Students at all three schools indicated that greatest frequency of use was made of their own libraries (item 7): 16 at Clark, 16 at Holy Cross, and 21 at Tech replied that they had used their library once a week or more during the past academic year; none said they had never used their own library. Tri-college interlibrary use was much less frequent, ranging from 13 and 10 Clark students who had used the Holy Cross and Tech libraries, respectively, to 10 and 6 Holy Cross students who had used the Clark and Tech libraries, to 8 and 4 WPI students who had made use of the Clark and Holy Cross libraries, respectively.

Among the other libraries in Worcester which students had used during the last academic year were, in descending order of use: Worcester Public Library (used by 18, 10, and 13 students from Clark, Holy Cross and Tech, respectively), the University of Massachusetts Medical Center library, and the Assumption College library. A comparison of the use figures for other tri-college library use shows that, with the exception of Holy Cross students' use of the Clark library, students at all three institutions use the

TABLE 1

FREQUENCY OF TRI-COLLEGE LIBRARY USE BY CROSS-REGISTERED STUDENTS

Responses from:	Holy Cross Students at Clark			Holy Cross Students at WPI			WPI Students at Clark			WPI Students at Holy Cross		
Libraries:	Clark	Holy Cross	WPI	Clark	Holy Cross	WPI	Clark	Holy Cross	WPI	Clark	Holy Cross	WPI
a) 1/week or more	0	1	0	0	2	0	1	0	3	0	0	2
b) 2/month	0	0	0	0	0	0	1	1	0	0	0	0
c) 1/month	0	0	0	2	1	1	0	1	0	0	0	0
d) 1/semester	1	0	0	0	0	0	0	0	0	1	1	0
e) Never	0	0	1	1	0	2	1	1	0	1	1	0
Total	1	1	1	3	3	3	3	3	3	2	2	2

Worcester Public Library more than they do the libraries of the other two schools.

When asked why use was made of one of the other tri-college libraries in preference to one's own library facilities, the majority of students at all three schools (16, 10, and 14 respectively, from Clark, Holy Cross and WPI) selected "better collection" as their reason. Several Holy Cross and WPI students also mentioned "interior physical environment" as a factor in their use of Clark's Goddard Library.

Most of the students who had visited another tri-college library went by private car (a total of 30 for all 3 institutions); this was followed by use made through the delivery of materials via the interlibrary loan shuttle service (a total of 22). Only a few (8) said they had used the WACL consortium shuttle bus as a mode of personal transportation; responses to item 15 showed the limited number of bus runs to be a source of dissatisfaction among several students.

In the next question, an attempt was made to ascertain the type of library use engaged in most frequently by the tri-college students. At their own library Clark students used the facilities most often for circulation purposes (checking out and returning materials for research, 21 affirmative responses for each). Holy Cross students used their library most frequently for studying from their own materials (20 students), locating materials for research (19), and consulting reference materials (15). At WPI, the 3 most frequent activities were the same as at Holy Cross, with 20 students selecting each. Frequency of responses for the other categories may be seen in the tabulations for item 10.

As for uses made of tri-college libraries other than their own by students, the responses show that the Clark library was used by both Holy Cross and WPI students primarily (though not predominantly) for locating materials for research. The same is true of Clark students' use of the Holy Cross library; no strong pattern of Holy Cross use by WPI students emerged. WPI's Gordon Library was used by Clark students most often for circulation purposes and for locating materials for research; its use by Holy Cross students fell into no dominant categories.

Students were also queried about the types of materials they used in the three libraries (item 11): books, journals, magazines, newspapers, microforms, or other audio-visual equipment. At all three schools, students tended to use their own library most for books, then journals or magazines (Clark: 22, 19 respectively; Holy Cross: 21, 12; WPI: 21, 17). Only at WPI was there an indication of heavy use of newspapers (12) and audio-visual equipment (14). Clark's Goddard Library was used more for its books than its serial collection by Holy Cross students (7 and 5, respectively), while WPI showed almost equal use of both (4 and 5, respectively). Clark students made use of the books (10) at the Holy Cross library more than the journals (5); little use of the Holy Cross library was indicated by WPI students. Clark and Holy Cross students used both books and journals (5, 5 and 4, 2, for the 2 schools, respectively) at the WPI library.

Item 12 attempted to gauge the level of satisfaction felt by the students with tri-college libraries they had used. In tabulating these responses, an additional category, "between satisfied and dissatisfied" was added to incorporate answers which did not fall into "satisfied," "dissatisfied," or "no opinion." The Clark library elicited positive responses from Holy Cross and WPI students: 7 at each were satisfied, none were dissatisfied, and 1 Holy Cross student had no opinion about the library. Clark students themselves, however, expressed more dissatisfaction (12) than satisfaction (8) with their own library; 3 felt satisfied with some aspects of their library, but not with others. Again, the Holy Cross library was not heavily used by WPI students (1 was satisfied, 2 had no opinions, and 1 in-between). However, Clark students who had used the Holy Cross library were largely satisfied (14, with 2 no opinions and 1 in-between). Most Holy Cross students themselves were satisfied as well (12), although (7) were not; there were 2 no opinions and 3 between satisfaction and dissatisfaction. Satisfaction with the WPI library was felt by 5 Clark students, 3 Holy Cross students, and 15 WPI students. Dissatisfaction was expressed by 3 Clark students and 1 WPI student; no opinion was given by 1, 2, and 2 students from Clark, Holy Cross and Tech, respectively. One Holy Cross student and 5 WPI students felt a mixture of satisfaction and dissatisfaction with the WPI library.

The sources of satisfaction and dissatisfaction with the students' own institutions' libraries were explored in the next two open-ended questions, items 13 and 14. The unstructured responses were then categorized as consistently as possible into five general areas of concern, embracing all the answers given: collection, physical facilities, staff, library operation and services, equipment. A sixth category covered those who could not identify anything they liked best or least about the three libraries.

For Clark, the physical facilities were mentioned most frequently (12) as the aspect which Clark students liked best about the Goddard library (e.g., three students mentioned the exterior, and five the interior design of the library, with particular references made to the Music Room and the Oral Study Rooms by two others).

The Clark collection was the next frequently mentioned (by 8 students) as the "best" feature of the library, followed by 7 who saw no best elements. It is interesting to note that the Clark collection and physical facilities are also the sources of greatest dissatisfaction for Clark students. The collection was felt to be the area of greatest inadequacy--among the responses, 6 mentioned the lacks in the collection in general, 5 specified inadequacies in journal holdings, 5 noted the lack of current materials, 4 said the physical arrangement of materials was difficult to use, and 7 complained about the maintenance aspect (i.e., materials missing from the shelves). The greatest complaint about the physical facilities concerned the noise problem (8), followed by inadequate lighting (6), and inadequate heat control (3).

Students at Holy Cross also chose the physical facilities as the "best" aspect of their library (e.g., the availability of study space (4), the quiet conditions (3), its convenient location (4), and 1 mention each of the Music Room and the Reilly Room. The next highest response was from 12 who said they knew of nothing they liked best about the library. As for what they liked least about the Holy Cross library, 23 made mention of some aspect of the library holdings, especially inadequacies in the collection in general (15). This was followed by dissatisfaction with the physical facilities (14), in particular the lack of sufficient study space (7) and the noise (4).

Similarly, WPI students chose as their institution's best aspect the physical facilities (10), not, as at Clark, for its aesthetic qualities, but rather for its quietness (5), the availability of study space (3), the Music Room (1), etc. Next was the collection (7), particularly the technical collection (6). Only at WPI did students (5) bring up the audio-visual facilities as an aspect of the library which they particularly liked. Again, the collection (12) and physical facilities (7) evoked the most dissatisfaction as well, in different ways. Students tended to criticize the collection lacks in the non-technical areas, counterbalancing their satisfaction with the technical holdings. On the other hand, some criticized the physical facilities for noise (4), exactly contradicting the opinions of others. The limited hours of opening, particularly at night and on weekends, was mentioned by some (4) as a negative element.

Finally, in an effort to determine the potential for increased interlibrary use among the tri-college students, item 15 asked for conditions under which more use would be made of each library. For the Clark library, Clark students most frequently (18) said they would use it more if the physical facilities were improved, especially if it were quieter (8) and better lighted (6). Improvements in the collection also ranked high (12) in this category. Both Holy Cross and WPI students indicated that they would use the Clark library more primarily if it were more conveniently located (9 and 5, respectively). The only other concentration of responses was found among Holy Cross students (5) and WPI students (10) who said that they would probably not increase their use of the Clark library for any reason because they had no need to do so.

The Holy Cross students interviewed said that they would use their own library more if there were more study space (11) and an improved collection (5). For most Clark (11) and WPI (12) students, however, no need was seen for increasing their use of the Holy Cross library. Those who would increase their Holy Cross library use would do so only if it were in a more convenient location (6 and 4, for Holy Cross and WPI, respectively).

Little interest was shown by Clark and Holy Cross students in increasing their use of the WPI library; 13 and 21, respectively, said they saw no need to do so. Among WPI students themselves, the improvement of the collection was seen as the greatest attraction for increased use (e.g., 5 mentioned improvement of the journal collection, 4 specified the same in non-technical holdings, etc.). A large proportion (10) of WPI students replied that they would not increase their library use because their level of usage was already at a maximum.

Student reactions to aspects of interlibrary cooperative services deserve mention as well. Suggestions from students, particularly those at Clark, for increasing use of the three libraries included publicizing interlibrary services, giving orientation tours for other tri-college students, improving ILL services, extending open borrowing privileges to all tri-college students, and increasing the consortium shuttle bus runs (especially at night and on weekends).

Summary

This non-probability sample of 75 students currently enrolled at Clark, Holy Cross, and WPI showed that, for the subjects interviewed, the following trends may be discerned with regard to the original study objectives.

1. degree of tri-college library use. One hundred percent of the students at all three institutions had used their own library during the past academic year, with a majority claiming at least weekly use. Significantly less use was made of one another's libraries; the Clark library

was used most, and the WPI library least, by students registered at other tri-college institutions.

2) reasons for tri-college library use. In general, the chief object of library use was to obtain the materials housed therein. For both their own and the other two tri-college library facilities, students indicated that locating materials for research and circulation purposes were their most common reasons for use.

3) attitudes toward and evaluation of current status. Clark students indicated the greatest dissatisfaction with their own library, and WPI students, the least (with Gordon Library). No dissatisfaction with tri-college libraries used, other than their own, was expressed, except by WPI students using the Clark library. Overall, the collections and the physical facilities of each library elicited both the most positive and the most negative responses from their own students.

4) attitudes toward increased tri-college library use. The students interviewed stated that they would increase their use of their own libraries if the collections (particularly at Clark and WPI) and the physical facilities (at Clark and Holy Cross) were improved. The majority of students, however, saw no need to use the libraries of the other two tri-college libraries more. The most frequently expressed condition of increased interlibrary use was if the other library were in a more convenient physical location.

APPENDIX A

STUDY OF DUPLICATION IN MONOGRAPH HOLDINGS--PROCEDURES

1. A sample will be drawn from the shelf-list at each of the three schools.
2. The sample will be established in a manner similar to the examples shown in M. C. Drott's article on random sampling in libraries (CRL, March 1969), using random numbers. Sample size will be based on Table 1 in Drott's article (p. 124), assuming a 95 percent confidence level and a tolerance of 5 percent. Thus each school will draw a sample of 384 shelf-list records. The random numbers will be converted to shelf-list tray numbers (or numbers that can easily be used to identify shelf-list trays) and a depth within each tray measured to the nearest sixteenth of an inch.
3. Materials to be surveyed:
    a. The sample will include all monographs, whether in print, hard copy, or microform; atlases; scores; and those monographic government documents which have been assigned a regular, non-Superintendent of Documents, classification. No exclusion will be made on the basis of special location within a library's total collection, availability for loan of the material, or date of acquisition.

    b. The sample will exclude serials, unanalyzed monographic series, periodicals, phonorecords and other audioforms, films, filmstrips, slides, unbound pictures or paintings, unbound maps, government documents which are housed in a separate documents collection and arranged by Superintendent of Documents number (or other non-Dewey, Cutter, or L. C. classification scheme), and dissertations, theses and honors papers written as part of the requirements for a degree at the school where the sample is being drawn.

4. Method for drawing sample:

   a. Open shelf-list tray specified on the list of converted random numbers. Measure from the first card back to the number of inches shown on the list. In order for this measurement to be accurate the cards must be compressed as much as possible. Examine the card at the specified point in the tray. If the card represents a work not to be included in the sample, line through the numbers on the list of converted numbers and disregard that entry. If the card represents a work which is to be included, remove the card(s) from the file and make two (2) photocopies on 8-1/2 x 11 inch paper (one record per sheet).

   b. As many cards as possible of a multi-card entry should be included, but five or six appears to be the practical limit. Cards should be arranged along only one edge of the Xerox sheet, leaving the other edge free for indicating number of volumes held by each school. More than three cards may be accommodated by "shingling" in such a manner as to cover up the repetition of main entry, title and imprint date on second and subsequent cards. Cards with dashed-on entries of variant editions need not be copied beyond the end of the description of the first-cataloged edition. Tracings, when typed on the backside of shelf-list cards, need not be copied.

c. Ignore any markings that indicate that the book is missing. Assume that if there is a card, there is a book (or that it will be replaced).

d. For multi-volume sets--including the presence of supplements, folios, atlases, etc., either in the collation or as dashed-on entries--holdings should be clearly identified. Absence of specific holdings information shall mean that all pieces identified on the catalog record are owned by the library except where dashed-on entry represents serial-type supplements, in which case the dashed-on entry is to be disregarded. It is not necessary to show how many copies are owned. (The other schools will be showing possession by specific title and edition, but not by number of copies.)

e. All photocopies of the shelf-list records are to be sorted into alphabetical order by main entry and given to Jinnie Davis, who will arrange to have them checked in the other two libraries.

5. Method for checking each sample:

   a. Check each member of the sample in the appropriate public catalog. Write the name of the school where the checking is being done in the blank portion of each sheet. Following the school's name show ownership by a check (✓) or non-ownership by a small zero (o). Always make a mark--leave no blanks. For purposes of defining a duplicated title, the choice and form of main entry need not be identical, but the description, as it pertains to edition statement and imprint must be the same.

Acceptable variations from precisely identical imprints which will be recorded as duplication:

-A reprint is a duplicate to an original of the same edition.

-A microreproduction is a duplicate to a hard-copy if they are the same edition.

-For different printings of the same edition, the copyright date will take precedence, provided that the information can be obtained from the catalog record.

-Paperbacks and hardbound copies are duplicates if the publishers and publication (or copyright) dates are the same.

-Miniature scores and full size scores are duplicates if they have the same publisher and year of publication (or copyright).

The presence of an order slip in the catalog for a title being checked is not to be considered a duplication.

b. Other special problems:

i) Monographs in analyzed series: Do not attempt to determine if a specific work is held as part of an unanalyzed series. If an author or title entry cannot be found in the catalog, assume that the work is not in the library.

(ii) Monographs in monographic sets: If the record being checked is in unanalyzed form for a collected set, do not attempt to determine if the set is held but analyzed, unless that can easily be done through collected works added entry cards. Conversely, if the record being checked is for an individual title in a collected set, do not attempt to find out if that title is owned but cataloged as part of a collected set, unless it is easy to do so by means of an analytic added entry.

iii) For multi-volume sets which are not capable of being analyzed, including those where the presence of supplements, folios, atlases, etc. may be shown either in the collation or as a dashed-on entry to an otherwise single-volume work, an effort should be made to note exactly which volumes or parts of the set are in the library; but

iv) if the record being checked has variant editions cataloged as dashed-on entries, check only for the first-cataloged edition, and

v) if the record being checked has a dashed-on entry for serial-type supplements, check only for the main volumes.

vi) Multiple copies: Make no effort to determine how many copies are in the library.

vii) Missing books: Do not try to find out if a book is missing. Assume that, if there is a card in the catalog, there is a book in the library or it would be replaced if missing.

6. Final results:

For each school, the total number of sample members and the percentage of the total sample duplicated at each of the other two schools will be shown. A breakdown will be given to show the number and percentage of duplication of material with pre-1968 imprint dates and for material with imprint dates of 1968-1977. The size and randomness of the samples are based on the total collections, so it should be kept in mind that the figures in the breakdown categories can only serve as guidelines, and no indication of tolerance or confidence level can be made for these data.

7. Schedule: Steps 1-4 to be completed by May 1, with the balance of the work to be done by June 1.

APPENDIX B

SAMPLE OF RECENT TITLES HELD IN ALL THREE LIBRARIES

No. of Circulations				
Clark	Holy Cross	WPI	Total	
3	3	0	6	Backus, Isaac. Isaac Backus on Church, State, and Calvinism. 1968.
5	2	2	9	Bailyn, Bernard. The Ordeal of Thomas Hutchinson. 1974.
1	0	0	1	Bradbrook, Muriel. Literature in Action. 1972.
6	5	2	13	Carroll, Paul. The Poem in its Skin. 1968.
1	6	5	12	Chomsky, Noam. Chomsky; Selected Readings. 1971.
12	13	1	26	DuBois, William. Dusk of Dawn. 1968.
Res.	Res.	0	Res.	Elon, Amos. The Israelis: Founders and Sons. 1971.
2	2	4	8	Georgescu-Roegen, Nicholas. The Entropy Law and the Economic Process. 1971.
Res.	11	0	Res.	Heidegger, Martin. Poetry, Language and Thought. 1971.
*	1	1		Howe, Irving. The Seventies: Problems and Proposals. 1972.
1	0	0	1	Howells, William D. Years of My Youth. 1974.
0	*	0		Hyperfunctions and Theoretical Physics. 1974.
Res.	*	0	Res.	Introduction to Nigerian Literature. 1971.
2	4	0	6	Isard, Walter. General Theory; Social, Political, Economic and Regional. 1969.
*	*	8		Jobes, Katherine. Twentieth Century Interpretations of The Old Man and the Sea. 1968.
2	*	4		King, Walter. Twentieth Century Interpretations of Twelfth Night. 1968.
0	1	4	5	Lakmikantham, V. Differential and Integral Inequalities. 1969.
4	2	0	6	Mazmanian, Daniel. Third Parties in Presidential Elections. 1974.
8	2	1	11	Noble, David. The Eternal Adam and the New World Garden. 1968.
2	0	4	6	Offner, Arnold. American Appeasement. 1969.
2	0	0	2	Parsons, Talcott, The American University. 1973.

SAMPLE OF RECENT TITLES HELD IN ALL THREE LIBRARIES
(Continued)

Clark	Holy Cross	WPI	Total	
1	0	2	3	Relativity Conference in the Midwest, Cincinnati. 1969.
0	0	0	0	Sachs, Nelly. The Seeker, and Other Poems. 1970.
0	0	0	0	Sario, Leo. Capacity Functions. 1969.
*	0	0		Seminar in Functional Analysis and Function Theory. 1975.
0	1	0	1	Symposium on Several Complex Variables, Park City, Utah. 1970.
0	0	3	3	Tits, Jacques. Building of Spherical Type and Finite BN-pairs. 1974.
1	1	0	2	Trezise, Philip. The Atlantic Connection. 1975.
0	*	0		U.S. Congress. Senate. Committee on Foreign Relations. Legislative Origins....1973.
Ref.	Ref.	Ref.	Ref.	U.S. Library of Congress. National Referral Center. Directory of Information Resources. 1974.
4	1	4	9	U.S. President's Council on Recreation and Natural Beauty. From Sea to Shining Sea. 1968.
Res.	*	4	Res.	Wall, Donald. Visionary Cities. 1971.
2	4	3	9	Work Incentives and Income Guarantees. 1975.
Res.	1	0	Res.	Wu, Silas. Communication and Imperial Control in China. 1970.

*Circulation record not available

APPENDIX C

FACULTY LIBRARY USE SURVEY

(CU = Clark University, HC = College of the Holy Cross, WPI = Worcester Polytechnic Institute)

I. PERSONAL

1. What is your academic rank?

Full Prof. Assoc. Prof. Asst. Prof. Instr. Lec.

2. How long have you been at this institution?

Years: 0-2 3-6 7-10 11-20 Over 20

3. Using the appropriate code from the list below, please indicate:

1 APPLIED SCIENCES
11 Biomedical Engineering
12 Chemical Engineering
13 Civil Engineering
14 Computer Science
15 Electrical Engineering
16 Environmental Affairs
17 Management Engineering
18 Materials Engineering
19 Mechanical Engineering
20 Nuclear Engineering

2 HUMANITIES
31 Art
32 Classics
33 Comparative Literature
34 English
35 Film Studies
36 French
37 German
38 Hebrew
39 Italian
40 Linguistics
41 Music
42 Philosophy
43 Religious Studies
44 Russian
45 Spanish
46 Theatre

3 ROTC
51 Aerospace Studies
52 Military Science
53 Naval Science

4 SCIENCES
61 Biology (Life Sciences)
62 Chemistry
63 Geology
64 Mathematics
65 Physics

5 SOCIAL SCIENCES
71 Business Administration
72 Economics
73 Education
74 Geography
75 History
76 Management
77 Physical Education
78 Political Science (Government & Int'l Relations)
79 Psychology
80 Sociology

6 OTHER
91 Other (specify) ________________

a) your departmental affiliation __ __

b) your major area of teaching activity __ __

c) your major area of research activity __ __

4. Have you participated in the faculty exchange program among the three institutions? Omitting your own, indicate the institution to which you were cross-appointed:

	Yes	No
a) CU	____	____
b) HC	____	____
c) WPI	____	____

5. Have you participated in any tri-college joint faculty research projects?

a)____Yes b)____No

6. Approximately how much of your working time is devoted to:

%:	100-86	85-76	75-51	50-26	25-1	None
a) teaching freshman-sophomore courses						
b) teaching junior-senior courses						
c) teaching graduate courses						
d) research						
e) administrative duties						

II. LIBRARY USE

1. Approximately how often have you used the libraries of the three institutions during this academic year (September 1976 to present), whether through personal visits or by sending an assistant?

	More than 1/wk	About 1/wk	About 1/mon	About 1/sem	Never
a) CU					
b) HC					
c) WPI					

2. If you answered "Never" to any of the above, please indicate why not:

	Not necessary for my field	Collection inadequate in my field	Other (please specify)
a) CU			
b) HC			
c) WPI			

3. When you use the library facilities of CU, HC, or WPI, how often is your purpose to: (For each item below, please circle the symbol for each library under the corresponding frequency.)

	Always	Frequently	Sometimes	Rarely	Don't use
a) check out or return materials	CU HC WPI	CU HC WPI	CU HC WPI	CU HC WPI	CU HC WPI
b) do leisure reading	CU HC WPI	CU HC WPI	CU HC WPI	CU HC WPI	CU HC WPI
c) browse among professional literature	CU HC WPI	CU HC WPI	CU HC WPI	CU HC WPI	CU HC WPI
d) use photocopying facilities	CU HC WPI	CU HC WPI	CU HC WPI	CU HC WPI	CU HC WPI
e) do library research for publishable work	CU HC WPI	CU HC WPI	CU HC WPI	CU HC WPI	CU HC WPI
f) do library research for teaching	CU HC WPI	CU HC WPI	CU HC WPI	CU HC WPI	CU HC WPI
g) use interlibrary loan	CU HC WPI	CU HC WPI	CU HC WPI	CU HC WPI	CU HC WPI
h) use reference services	CU HC WPI	CU HC WPI	CU HC WPI	CU HC WPI	CU HC WPI
i) use bibliographical tools (e.g., card catalog)	CU HC WPI	CU HC WPI	CU HC WPI	CU HC WPI	CU HC WPI
j) other (specify) ______________	CU HC WPI	CU HC WPI	CU HC WPI	CU HC WPI	CU HC, WPI

4. Please check the principal types of library materials you used during your visits to these libraries in the past academic year (September 1976 to present):

	CU	HC	WPI
a) scholarly journals			
b) popular magazines			
c) newspapers			
d) research books			
e) reference books			
f) government documents			
g) theses			
h) general books			
i) leisure reading			
j) microforms			
k) own materials			
l) other materials (specify) ______________			
m) not applicable (don't use library)			

5. How familiar are you with the collections of the following libraries in your fields of interest?

	Know thoroughly	Know well	Fairly familiar	Slightly familiar	Not at all
a) CU					
b) HC					
c) WPI					

6. When you go to your own institution's library for a specific item, what is your expectation that when you leave the library, you will have the item in hand?

______ Always ______ Frequently ______ Sometimes ______ Rarely ______ Don't use

7. When your library does not have an item you need, where do you normally try next (whether through a personal visit, interlibrary loan, etc.)? Check one, omitting your own library:

a) CU ______
b) HC ______
c) WPI ______
d) other library in Worcester (specify) ______
____
e) other library outside Worcester (specify)______________ ______
f) colleagues' collections ______
g) discontinue search ______
h) not applicable (don't use library) ______

8. When you go to one of the other tri-college libraries, what are your usual reasons for going there (instead of to your own institution's library)? Omitting your own library, please rank the following reasons, with 1 = most usual reason, 2 = next, etc.):

	CU	HC	WPI
a) physical proximity to office			
b) physical proximity to home			
c) better collection			
d) friendlier service			
e) experienced failure elsewhere			
f) referred by faculty from own institution			
g) referred by librarian from own institution			
h) other (specify) ______________			
i) not applicable (don't use library)			

9. When you try one of the other tri-college libraries, do you usually prefer: (Check one)

a) personal visit ________
b) use of interlibrary loan shuttle ________
c) send a friend ________
d) other (specify) ____________ ________
____
e) not applicable (don't use library) ________

10. When you try one of the tri-college libraries, to what extent are your library needs usually satisfied?

	Completely	Adequately	Somewhat	Rarely	Don't Use
a) CU					
b) HC					
c) WPI					

11. Are your courses organized to encourage student use of the following libraries:

	Yes	No
a) CU	____	____
b) HC	____	____
c) WPI	____	____

12. Normally, how often each semester do you encourage student use of the following libraries (check one):

	1/wk	2/mon	1/mon	1/sem	Never
a) CU					
b) HC					
c) WPI					

13. When you encourage student use of your own library, what is the usual reason for doing so? Check one.

	Materials on reserve	Interlibrary loan	Reference service	Bibliographical tools	Other (specify)	Not applicable
a) CU						
b) HC						
c) WPI						

14. When your students go to your library for your above-indicated reason, are their library needs satisfied? Check one.

a) ___ Yes b) ___ No c) ___ Unsure d) ___ Not applicable

15. If you do not incorporate student use of your library into your courses, why not?

a) ___Not necessary for course(s)
b) ___Collection inadequate in this field
c) ___Other (specify) ____________
____

16. When you encourage student use of either of the other two libraries, what is your usual reason for doing so? (Omit your own)

	Better collection	Better service	Other (specify)	Not applicable
a) CU				
b) HC				
c) WPI				

17. If you do not incorporate student use of the other two libraries into your courses, why not?

	Not necessary for course	Collection inadequate in this field	Inconvenience of limited student privileges	Other (specify)	Not applicable
a) CU					
b) HC					
c) WPI					

III. LIBRARY EVALUATION

1. Rank the importance of the following factors in your use of any library: (with 1 = most important, 2 = next in importance, etc.

a) ____ interior physical environment
b) ____ helpfulness of library staff
c) ____ convenience of access (location, parking, etc.)
d) ____ quality of collection
e) ____ hours of opening
f) ____ other (specify) ______________________

2. Rank the importance of the following sources of information for your teaching and research needs (with 1 = most important, 2 = next in importance, etc.):

	Teaching	Research	
a)	____	____	personal collections (subscriptions, books, etc.)
b)	____	____	conversations with librarians
c)	____	____	library collections of own institution
d)	____	____	conversations with colleagues
e)	____	____	colleagues' collections
f)	____	____	other (specify) ______________________

3. Rate the following areas of your institution's library in terms of adequacy for your teaching and research needs:

	Very adequate	Adequate	Inadequate	Totally inadequate	No opinion
a) circulation policies (fines, borrowing period, etc.)					
b) service at circulation desk					
c) quality of cataloging					
d) speed of cataloging					
e) service at card catalog					
f) quality of reference service					
g) amount of reference service					
h) procedures for adding new materials					
i) quality of collection in your field of interest					
j) hours of opening					
k) interior physical environment					
l) convenience of access (location, parking, etc.)					
m) other (specify) ______ ______________					

IV. PRESENT STATUS OF LIBRARY COOPERATION

1. Have you ever used the following cooperative library services:

	Yes	No
a) interlibrary loan shuttle among WACL* members		
b) union list of serials held by WACL members		
c) faculty shared library privileges among tri-college libraries		
d) interlibrary loan from libraries throughout the country		

*WACL, Worcester Area Cooperating Libraries, is a consortium of libraries including those of CU, HC, and WPI.

2. Approximately how often have you used these services during the last academic year (September 1976 to present):

	About 1/wk	About 1/mon	About 1/sem	Less than 1/sem	Never
a) interlibrary loan shuttle among WACL members					
b) union list of serials held by WACL members					
c) faculty shared library privileges among tri-college libraries					
d) interlibrary loan from libraries throughout the country					

3. If you have never used these services, why not?

	Not necessary	Not aware of	Other(specify)
a) interlibrary loan shuttle among WACL members			
b) union list of serials held by WACL members			
c) faculty shared library privileges among tri-college libraries			
d) interlibrary loan from libraries throughout the country			

4. If you have used these services, how well did they satisfy your need?

	Entirely adequate	Adequate	Inadequate	Entirely inadequate	No opinion
a) interlibrary loan shuttle among WACL members					
b) union list of serials held by WACL members					
c) faculty shared library privileges among tri-college libraries					
d) interlibrary loan from libraries throughout the country					

V. COMMENTS

1. When you use your institution's library, which area do you find in need of the greatest improvement?

2. If you have any suggestions for improving interlibrary services among these three institutions, please feel free to comment on them:

APPENDIX D

FACULTY LIBRARY USE SURVEY: DATA TABULATIONS

(Numbers in parentheses are base N's for the percentages)

I. 1. What is your academic rank?

	CU		HC		WPI		ALL	
Full professor	40%	(10)	21.9%	(7)	43.3%	(13)	34.5%	(30)
Assoc. professor	24%	(6)	37.5%	(12)	33.3%	(10)	32.2%	(28)
Asst. professor	24%	(6)	37.5%	(12)	20.0%	(6)	27.6%	(24)
Instructor	0	(0)	3.1%	(1)	3.3%	(1)	2.3%	(2)
Lecturer	12%	(3)	0	(0)	0	(0)	3.4%	(3)
Total	100%	(25)	100.0%	(32)	100.0%	(30)	100.0%	(87)

I. 2. How long have you been at this institution?

	CU		HC		WPI		ALL	
Years: 0-2	24%	(6)	25.0%	(8)	3.3%	(1)	17.2%	(15)
3-6	24%	(6)	18.8%	(6)	33.3%	(10)	25.3%	(22)
7-10	16%	(4)	15.6%	(5)	13.3%	(4)	14.9%	(13)
11-20	24%	(6)	31.3%	(10)	36.7%	(11)	31.0%	(27)
20+	12%	(3)	9.4%	(3)	13.3%	(4)	11.5%	(10)
Total	100%	(25)	100.0%	(32)	100.0%	(30)	100.0%	(87)

I. 3a. Please indicate your departmental affiliation:

	CU		HC		WPI		ALL	
Applied Sciences	0	(0)	0	(0)	53.3%	(16)	18.4%	(16)
Humanities	32%	(8)	37.5%	(12)	9.9%	(3)	26.4%	(23)
ROTC	0	(0)	3.1%	(1)	3.3%	(1)	2.3%	(2)
Sciences	16%	(4)	25.0%	(8)	23.3%	(7)	21.8%	(19)
Social Sciences	44%	(11)	34.4%	(11)	6.7%	(2)	27.6%	(24)
Other	8%	(2)	0	(0)	3.3%	(1)	3.4%	(3)
Total	100%	(25)	100%	(32)	100%	(30)	100%	(87)

I. 4. Have you participated in the faculty exchange program among the three institutions?

	CU		HC		WPI		ALL	
Yes, to CU	--		0	(0)	3.4%	(1)	1.1%	(1)
Yes, to HC	0	(0)	--		0	(0)	0	(0)
Yes, to WPI	0	(0)	3.3%	(1)	--		1.1%	(1)
No	100%	(25)	96.7%	(31)	96.6%	(29)	97.7%	(85)
Total	100%	(25)	100%	(32)	100%	(30)	100%	(87)

I. 5. Have you participated in any tri-college faculty research projects?

	CU		HC		WPI		ALL	
Yes	8%	(2)	6.3%	(2)	10%	(3)	8.1%	(7)
No	92%	(23)	93.8%	(30)	90%	(27)	91.9%	(80)
Total	100%	(25)	100%	(32)	100%	(30)	100%	(87)

II. 1. Approximately how often have you used the libraries of the three institutions during this academic year (September 1976 to present)?

	CU			HC			WPI			ALL		
	CU	HC	WPI	CU	HC	WPI	CU	HC	WPI	CU	HC	WPI
1/wk or more	69.6% (16)	0 (0)	0 (0)	9.7% (3)	76.7% (23)	3.3% (1)	10.7% (3)	3.6% (1)	78.5% (22)	26.8% (22)	28.9% (24)	27.7% (23)
1/mon or less	21.7% (5)	24% (6)	16% (4)	61.3% (19)	23.3% (7)	20.0% (6)	32.2% (9)	17.8% (5)	21.4% (6)	40.2% (33)	21.7% (18)	19.3% (16)
Never	8.7% (2)	76% (19)	84% (21)	29.0% (9)	0 (0)	76.7% (23)	57.1% (16)	78.6% (22)	0 (0)	32.9% (27)	49.4% (41)	53% (44)
Missing	(2)	(0)	(0)	(1)	(2)	(2)	(2)	(2)	(2)	(5)	(4)	(4)
Total	100% (25)	100% (25)	100% (25)	100% (32)	100% (32)	100% (32)	100% (30)	100% (30)	100% (39)	100% (87)	100% (87)	100% (87)

II. 2. If you answered "Never" to any of the above, please indicate why not:

	CU			HC			WPI			ALL		
	CU	HC	WPI	CU	HC	WPI	CU	HC	WPI	CU	HC	WPI
Not necessary for my field	100% (2)	40% (6)	41.2% (7)	50% (3)	0 (0)	57.9% (11)	61.5% (8)	50% (9)	0 (0)	61.9% (13)	45.5% (15)	48.6% (18)
Collection inadequate in my field	0 (0)	13% (2)	35.3% (6)	33.3% (2)	0 (0)	21.1% (4)	15.4% (2)	11.1% (2)	100% (1)	19% (4)	12.1% (4)	29.7% (11)
Other	0 (0)	40% (6)	17.6% (3)	16.7% (1)	0 (0)	10.5% (2)	15.4% (2)	27.8% (5)	0 (0)	14.3% (3)	33.3% (11)	13.5% (5)
More than 1 of above	0 (0)	6.7% (1)	5.9% (1)	0 (0)	0 (0)	10.5% (2)	7.7% (1)	11.1% (2)	0 (0)	4.8% (1)	9.1% (3)	8.1% (3)
Missing	(1)	(4)	(4)	(4)	(1)	(6)	(5)	(6)	(3)	(10)	(11)	(13)
Total	100% (3)	100% (19)	100% (21)	100% (10)	-	100% (25)	100% (18)	100% (24)	100% (4)	100% (31)	100% (44)	100% (50)

II. 3. When you use the library facilities of CU, HC, or WPI, how often is your purpose to:

Responses from Clark: Use of CU	Check out or return material	Do leisure reading	Browse among professional literature	Use photo-copying facilities	Do library research for pub. work	Do library research for teaching	Use ILL	Use reference services	Use biblio-graphical tools	Other
Always or Frequently	80% (16)	5.9% (1)	47.4% (9)	50% (10)	47.6% (10)	44.4% (8)	26.3% (5)	42.1% (8)	45% (9)	0 (0)
Sometimes	20% (4)	17.6% (3)	42.1% (8)	15% (3)	38.1% (8)	38.9% (7)	47.4% (9)	31.6% (6)	40% (8)	100% (1)
Rarely or Never	0 (0)	76.5% (13)	10.5% (2)	35% (7)	14.3% (3)	16.7% (3)	26.3% (5)	26.3% (5)	15% (3)	0 (0)
Missing	(3)	(6)	(4)	(3)	(2)	(5)	(4)	(4)	(3)	(22)
Total	100% (23)	100% (23)	100% (23)	100% (23)	100% (23)	100% (23)	100% (23)	100% (23)	100% (23)	100% (23)

Responses from HC: Use of HC	Check out or return material	Do leisure reading	Browse among professional literature	Use photo-copying facilities	Do library research for pub. work	Do library research for teaching	Use ILL	Use reference services	Use biblio-graphical tools	Other
Always or Frequently	87.5% (21)	17.4% (4)	69.2% (18)	18.2% (4)	44% (11)	57.7% (15)	23.8% (5)	52.2% (12)	64% (16)	0 (0)
Sometimes	12.5% (3)	30.4% (7)	26.9% (7)	22.7% (5)	32% (8)	34.6% (9)	23.8% (5)	17.4% (4)	24% (6)	0 (0)
Rarely or Never	0 (0)	52.2% (12)	3.8% (1)	59.1% (13)	24% (6)	7.7% (2)	52.4% (11)	30.4% (7)	12% (3)	100% (1)
Missing	(8)	(9)	(6)	(10)	(7)	(6)	(11)	(9)	(7)	(31)
Total	100% (32)	100% (32)	100% (32)	100% (32)	100% (32)	100% (32)	100% (32)	100% (32)	100% (32)	100% (32)

II. 3. (continued)

Response from WPI: Use of WPI	Check out or return material	Do leisure reading	Browse among professional literature	Use photo-copying facilities	Do library research for pub. work	Do library research for teaching	Use ILL	Use reference services	Use biblio-graphical tools	Other
Always or Frequently	61.5% (16)	16.7% (4)	44% (11)	29.6% (8)	34.6% (9)	44.4% (12)	18.2% (4)	40% (10)	51.9% (14)	0 (0)
Sometimes	38.5% (10)	45.8% (11)	40% (10)	25.9% (7)	19.2% (5)	51.9% (14)	27.3% (6)	28% (7)	37% (10)	50% (1)
Rarely or Never	0 (0)	37.5% (9)	16% (4)	44.4% (12)	46.2% (12)	3.7% (1)	54.5% (12)	32% (8)	11.1% (3)	50% (1)
Missing	(4)	(6)	(5)	(3)	(4)	(3)	(8)	(5)	(3)	(28)
Total	100% (30)	100% (30)	100% (30)	100% (30)	100% (30)	100% (30)	100% (30)	100% (30)	100% (30)	100% (30)

II. 4. Please check the principal types of library materials you used during your visits to these libraries in the past academic year (September, 1976 to present):

Responses from all for CU	Scholarly journals	Popular Magazines	Newspapers	Research books	Reference books	Government documents
Used	89.1% (49)	1.8% (1)	3.7% (2)	76.4% (42)	54.5% (30)	14.5% (8)
Didn't use	10.9% (6)	98.2% (54)	96.3% (52)	23.6% (13)	45.5% (25)	85.5% (4)
Don't use library	(27)	(27)	(27)	(27)	(27)	(27)
Missing	(5)	(5)	(6)	(5)	(5)	(5)
Total	100% (87)	100% (87)	100% (87)	100% (87)	100% (87)	100% (87)

Responses from all for CU	Theses	General books	Leisure reading	Microforms	Own Material	Other Materials
Used	16.4% (9)	27.3% (15)	5.5% (3)	3.6% (2)	5.5% (3)	3.6% (2)
Didn't use	83.6% (46)	72.7% (40)	94.5% (52)	96.4% (53)	94.5% (52)	96.4% (53)
Don't use library	(27)	(27)	(27)	(27)	(27)	(27)
Missing	(5)	(5)	(5)	(5)	(5)	(5)
Total	100% (87)	100% (87)	100% (87)	100% (87)	100% (87)	100% (87)

II. 4. (continued)

Responses from all for HC	Scholarly journals	Popular Magazines	Newspapers	Research books	Reference books	Government documents
Used	72.5% (29)	15% (6)	23.1% (9)	66.7% (26)	53.8% (21)	15.4% (6)
Didn't use	27.5% (11)	85% (34)	76.9% (30)	33.3% (13)	46.2% (18)	84.6% (33)
Don't use library	(41)	(41)	(41)	(42)	(42)	(42)
Missing	(6)	(6)	(7)	(6)	(6)	(6)
Total	100% (87)	100% (87)	100% (87)	100% (87)	100% (87)	100% (87)

Responses from all for HC	Theses	General books	Leisure reading	Microforms	Own Material	Other Materials
Used	2.6% (1)	41% (16)	23.1% (9)	7.7% (3)	10.3% (4)	0 (0)
Didn't use	97.4% (38)	59% (23)	76.9% (30)	92.3% (36)	89.7% (35)	100% (39)
Don't use library	(42)	(42)	(42)	(42)	(42)	(42)
Missing	(6)	(6)	(6)	(6)	(6)	(6)
Total	100% (87)	100% (87)	100% (87)	100% (87)	100% (87)	100% (87)

II. 4. (continued)

Responses from all for WPI	Scholarly journals	Popular Magazines	Newspapers	Research books	Reference books	Government documents
Used	87.2% (34)	28.2% (11)	20.5% (8)	74.4% (29)	77.5% (31)	17.9% (7)
Didn't use	12.8% (5)	71.8% (28)	79.5% (31)	25.6% (10)	22.5% (9)	82.1% (32)
Don't use library	(45)	(45)	(45)	(45)	(44)	(45)
Missing	(3)	(3)	(3)	(3)	(3)	(3)
Total	100% (87)	100% (87)	100% (87)	100% (87)	100% (87)	100% (87)

Responses from all for WPI	Theses	General books	Leisure reading	Microforms	Own Material	Other Materials
Used	22.5% (9)	35.9% (14)	30.8% (12)	2.6% (1)	2.6% (1)	2.6% (1)
Didn't use	77.5% (31)	64.1% (25)	69.2% (27)	97.4% (38)	97.4% (38)	97.4% (38)
Don't use library	(44)	(44)	(44)	(44)	(44)	(44)
Missing	(3)	(3)	(4)	(4)	(4)	(4)
Total	100% (87)	100% (87)	100% (87)	100% (87)	100% (87)	100% (87)

II. 5. How familiar are you with the collections of the following libraries in your fields of interest?

	CU			HC			WPI			ALL		
	CU	HC	WPI	CU	HC	WPI	CU	HC	WPI	CU	HC	WPI
Know thoroughly	33.3% (7)	0 (0)	0 (0)	7.4% (2)	48.3% (14)	4% (1)	11.1% (3)	0 (1)	50% (15)	16% (12)	17.5% (14)	20.5% (16)
Know well	47.6% (10)	4.2% (1)	0 (0)	25.9% (7)	34.5% (10)	4% (1)	11.1% (3)	7.4% (2)	36.7% (11)	26.7% (20)	16.2% (13)	15.4% (12)
Fairly familiar	9.5% (2)	20.8% (5)	8.7% (2)	22.2% (6)	17.2% (5)	8% (2)	18.5% (5)	7.4% (2)	13.3% (4)	17.3% (13)	15% (12)	10.3% (8)
Slightly familiar	9.5% (2)	20.8% (5)	26.1% (6)	22.2% (6)	0 (0)	40% (10)	7.4% (2)	14.8% (4)	0 (0)	13.3% (10)	11.2% (9)	20.5% (16)
Not at all	0 (0)	54.2% (13)	65.2% (15)	22.2% (6)	0 (0)	44% (11)	51.9% (14)	70.4% (19)	0 (0)	26.7% (20)	40% (32)	33.3% (26)
Missing	(4)	(1)	(2)	(5)	(3)	(7)	(3)	(3)	(0)	(12)	(7)	(9)
Total	100% (25)	100% (25)	100% (25)	100% (32)	100% (32)	100% (32)	100% (30)	100% (30)	100% (30)	100% (87)	100% (87)	100% (87)

II. 6. When you go to your own institution's library for a specific item, what is your expectation that when you leave the library, you will have the item in hand?

	CU	HC	WPI	ALL
Always	4% (1)	13.3% (4)	3.3% (1)	7.1% (6)
Frequently	44% (11)	63.3% (19)	86.7% (26)	65.9% (56)
Sometimes	44% (11)	16.7% (5)	6.7% (2)	21.2% (18)
Rarely	8% (2)	6.7% (2)	3.3% (1)	5.9% (5)
Missing	(0)	(2)	(0)	(2)
Total	100% (25)	100% (32)	100% (30)	100% (87)

II. 7. When your library does not have an item you need, where do you normally try next?

	CU	HC	WPI
CU	——	(13)	(9)
HC	(6)	——	(1)
WPI	(2)	(5)	——
Other library in Worcester	(7)	(11)	(6)
Other library outside Worcester	(15)	(7)	(13)
Colleagues' collections	(4)	(5)	(5)
Discontinue search	(0)	(0)	(3)
	(34)*	(41)*	(37)*

* Figures include tabulation of multiple responses

II. 7 (continued)

d. Other library in Worcester:

	CU	HC	WPI
Alden Research Laboratory	-	-	1
American Antiquarian Society	1	-	-
Astra	-	1	-
University of Mass. Medical Center	1	1	1
Worcester Art Museum	-	1	-
Worcester Foundation for Experimental Biology	1	1	2
Worcester Public Library	4	7	2

e. Other library outside Worcester:

	CU	HC	WPI
American Geographical Society	1	-	-
Brown University	2	-	-
Boston area libraries	2	-	1
Boston Public Library	2	1	-
Boston University	-	-	1
Department of Defense, State Department	-	1	-
Harvard University	2	2	1
MIT	1	-	6
R.I. School of Design	1	-	-
University of Mass., Amherst	-	1	-
Interlibrary loan wherever available	4	2	4

II. 8. When you go to one of the other tri-college libraries, what are your usual reasons for going there (instead of to your own institution's library)?

CU:	Physical proximity to office		Physical proximity to home		Better collection		Friendlier service		Failure elsewhere		Referred by faculty		Referred by librarian		Other	
	HC	WPI	HC	WPI	HC	WPI	HC	WPI	HC	WPI	HC	WPI	HC	WPI	HC	WPI
1st	1	1	-	-	-	-	-	-	1	-	-	1	2	1	1	1
2nd	-	-	1	1	2	-	-	-	-	-	-	-	-	-	-	1
3rd	-	-	-	-	-	1	-	-	-	-	-	-	1	-	-	-
4th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Missing	(7)	(4)	(7)	(4)	(5)	(4)	(8)	(5)	(1)	(5)	(8)	(4)	(6)	(4)	(7)	(3)

II. 8. When you go to one of the other tri-college libraries, what are your usual reasons for going there (instead of to your own institution's library)?

HC:	Physical proximity to office		Physical proximity to home		Better collection		Friendlier service		Failure elsewhere		Referred by faculty		Referred by librarian		Other	
	CU	WPI	CU	WPI	CU	WPI	CU	WPI	CU	WPI	CU	WPI	CU	WPI	CU	WPI
1st	2	-	-	1	11	3	-	-	5	2	-	-	2	1	2	1
2nd	2	-	-	-	2	1	-	-	2	1	2	-	3	1	1	-
3rd	-	-	-	-	-	-	-	-	1	-	2	1	1	-	-	-
4th	-	-	-	-	1	1	-	-	-	-	-	-	1	-	-	-
5th	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
6th	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7th	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
8th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Missing	(5)	(2)	(5)	(2)	(3)	(2)	(5)	(2)	(4)	(2)	(4)	(2)	(4)	(2)	(4)	(1)

II. 8. When you go to one of the other tri-college libraries, what are your usual reasons for going there (instead of to your own institution's library)?

WPI:	Physical proximity to office		Physical proximity to home		Better collection		Friendlier service		Failure elsewhere		Referred by faculty		Referred by librarian		Other	
	CU	HC	CU	HC	CU	HC	CU	HC	CU	HC	CU	HC	CU	HC	CU	HC
1	-	-	-	-	8	4	-	-	-	-	-	-	1	-	-	-
2	1	-	-	-	-	-	-	-	-	-	1	-	2	1	-	-
3	-	-	-	-	-	-	-	-	1	1	-	-	-	-	1	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Missing	(6)	(3)	(6)	(3)	(4)	(2)	(6)	(3)	(6)	(3)	(6)	(3)	(6)	(3)	(6)	(3)

II. 9. When you try one of the other tri-college libraries, do you usually prefer:

	CU	HC	WPI	ALL
Personal visit	24% (6)	50% (15)	17.2% (5)	31% (26)
Use of ILL shuttle	40% (10)	23.3% (7)	41.4% (12)	34.5% (29)
Send friend	4% (1)	-	-	1.2% (1)
More than 1	-	3.3% (1)	-	1.2% (1)
Other	-	-	-	-
Don't use library	32% (8)	23.3% (7)	41.4% (12)	32.1% (27)
Missing	-	(2)	(1)	(3)
Total	100% (25)	100% (32)	100% (30)	100% (87)

II. 10. When you try one of the tri-college libraries, to what extent are your library needs usually satisfied?

	CU			HC			WPI			ALL		
	CU	HC	WPI	CU	HC	WPI	CU	HC	WPI	CU	HC	WPI
Completely or Adequately	30% (3)	4.8% (1)	5% (1)	60% (18)	92.3% (12)	27.6% (8)	38.5% (10)	11.5% (3)	80% (12)	47% (10)	26.7% (16)	32.8% (21)
Somewhat or Rarely	40% (4)	42.9% (9)	25% (5)	10% (3)	7.7% (1)	3.4% (1)	11.5% (3)	15.4% (4)	13.3% (2)	15.2% (10)	23.3% (14)	12.5% (8)
Don't use	30% (3)	52.4% (11)	70% (14)	30% (9)	(0)	69% (20)	50% (13)	73.1% (19)	6.7% (1)	37.9% (25)	50% (30)	54.7% (35)
Missing	(15)	(4)	(5)	(2)	(19)	(3)	(4)	(4)	(15)	(21)	(27)	(23)
Total	100% (25)	100% (25)	100% (25)	100% (32)	100% (32)	100% (32)	100% (30)	100% (30)	100% (30)	100% (87)	100% (87)	100% (87)

II. 11. Are your courses organized to encourage student use of the following libraries:

Responses from:	Clark			Holy Cross			Wor. Poly. Inst.		
	CU	HC	WPI	CU	HC	WPI	CU	HC	WPI
Yes	81.8% (18)	13.6% (3)	9.5% (2)	8.3% (2)	96.7% (29)	0 (0)	26.9% (7)	16.7% (4)	86.7% (26)
No	18.2% (4)	86.4% (19)	90.5% (19)	83.3% (20)	0 (0)	100% (24)	73.1% (19)	83.3% (20)	13.3% (4)
Somewhat	0 (0)	0 (0)	0 (0)	8.3% (2)	3.3% (1)	0 (0)	0 (0)	0 (0)	0 (0)
Missing	(3)	(3)	(4)	(8)	(2)	(8)	(4)	(6)	(0)
Total	100% (25)	100% (25)	100% (25)	100% (32)	100% (32)	100% (32)	100% (30)	100% (30)	100% (30)

II. 12. Normally, how often each semester do you encourage student use of the following libraries:

	CU			HC			WPI			ALL		
	CU	HC	WPI	CU	HC	WPI	CU	HC	WPI	CU	HC	WPI
1/wk	61.9% (13)	0 (0)	0 (0)	0 (0)	50% (14)	0 (0)	7.7% (2)	4.5% (1)	42.9% (12)	20.5% (15)	20.8% (15)	16.4% (12)
2/mon	19% (4)	0 (0)	0 (0)	7.7% (2)	28.6% (8)	0 (0)	0 (0)	0 (0)	25% (7)	8.2% (6)	11.1% (8)	9.6% (7)
1/mon	9.5% (2)	9.1% (2)	0 (0)	15.4% (4)	10.7% (3)	8.3% (2)	7.7% (2)	4.5% (1)	14.3% (4)	11% (8)	8.3% (6)	8.2% (6)
1/sem	4.8% (1)	18.2% (4)	14.3% (3)	15.4% (4)	10.7% (3)	4.2% (1)	7.7% (2)	0 (0)	14.3% (4)	9.6% (7)	9.7% (7)	11% (8)
Never	4.8% (1)	72.7% (16)	85.7% (18)	61.5% (16)	0 (0)	87.5% (21)	76.9% (20)	91% (20)	3.6% (1)	50.7% (37)	50% (36)	54.8% (40)
Missing	(4)	(3)	(4)	(6)	(4)	(8)	(4)	(8)	(2)	(14)	(15)	(14)
Total	100% (25)	100% (25)	100% (25)	100% (32)	100% (32)	100% (32)	100% (30)	100% (30)	100% (30)	100% (87)	100% (87)	100% (87)

II. 14. When your students go to your library for your above-indicated reason, are their library needs satisfied?

	CU	HC	WPI	ALL
Yes	45.5% (10)	87.1% (27)	86.2% (25)	75.6% (62)
No	9.1% (2)	6.5% (2)	0 (0)	4.9% (4)
Unsure	45.5% (10)	6.5% (2)	13.8% (4)	19.5% (16)
Missing	(3)	(1)	(1)	(5)
Total	100% (25)	100% (32)	100% (30)	100% (87)

II. 15. If you do not incorporate student use of your library into your courses, why not?

	CU	HC	WPI	ALL
Not necessary for course(s)	25% (1)	75% (3)	80% (4)	61.5% (8)
Collection inadequate in this field	50% (2)	0 (0)	0 (0)	15.4% (2)
Other	25% (1)	25% (1)	20% (1)	23.1% (3)
Missing	(4)	(1)	(1)	(6)
Total	100% (8)	100% (5)	100% (6)	100% (19)

III. 1. Rank the importance of the following factors in your use of any library:

	Interior physical environment				Helpfulness of library staff				Convenience of access			
	CU	HC	WPI	ALL	CU	HC	WPI	ALL	CU	HC	WPI	ALL
1	0 (0)	4.5% (1)	0 (0)	1.6% (1)	4.5% (1)	11.1% (3)	11.1% (3)	9.2% (7)	4.5% (1)	0 (0)	16% (4)	6.8% (5)
2	10% (2)	9.1% (2)	0 (0)	6.5% (4)	45.5% (10)	33.3% (9)	40.7% (11)	39.5% (30)	40.9% (9)	34.6% (9)	24% (6)	32.9% (24)
3	15% (3)	18.2% (4)	5% (1)	12.9% (8)	27.3% (6)	22.2% (6)	33.3% (9)	27.6% (21)	27.3% (6)	30.8% (8)	28% (7)	28.8% (21)
4	30% (6)	40.9% (9)	40% (8)	37.1% (23)	13.6% (3)	14.8% (4)	7.4% (2)	11.8% (9)	18.2% (4)	30.8% (8)	16% (4)	21.9% (16)
5	40% (8)	27.3% (6)	50% (10)	38.7% (24)	9.1% (2)	18.5% (5)	7.4% (2)	11.8% (9)	9.1% (2)	3.8% (1)	16% (4)	9.6% (7)
6	5% (1)	0 (0)	5% (1)	3.2% (2)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Missing	(5)	(10)	(10)	(25)	(3)	(5)	(3)	(11)	(3)	(6)	(5)	(14)
Total	100% (25)	100% (32)	100% (30)	100% (87)	100% (25)	100% (32)	100% (30)	100% (87)	100% (25)	100% (32)	100% (30)	100% (87)

III. 1. (continued) Rank the importance of the following factors in your use of any library:

	Quality of collection				Hours of opening				Other			
	CU	HC	WPI	ALL	CU	HC	WPI	ALL	CU	HC	WPI	ALL
1	92% (23)	89.7% (26)	73.3% (22)	84.5% (71)	0 (0)	0 (0)	3.8% (1)	1.4% (1)	0 (0)	50% (1)	0 (0)	25% (1)
2	8% (2)	10.3% (3)	20% (6)	13.1% (11)	5% (1)	24% (6)	23.1% (6)	18.3% (13)	0 (0)	50% (1)	0 (0)	25% (1)
3	0 (0)	0 (0)	3.3% (1)	1.2% (1)	35% (7)	32% (8)	34.6% (9)	33.8% (24)	100% (1)	-	-	25% (1)
4	0 (0)	0 (0)	3.3% (1)	1.2% (1)	30% (6)	12% (3)	23.1% (6)	21.1% (6)	-	-	100% (1)	25% (1)
5	0 (0)	0 (0)	0 (0)	0 (0)	30% (6)	28% (7)	15.4% (4)	23.9% (17)	-	-	-	-
6	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	4% (1)	0 (0)	1.4% (1)	-	-	-	-
Missing	(0)	(3)	(0)	(3)	(5)	(7)	(4)	(16)	(24)	(30)	(29)	(83)
Total	100% (25	100% (32)	100% (30)	100% (87)	100% (25)	100% (32)	100% (30)	100% (87)	100% (25)	100% (32)	100% (30)	100% (87)

III. 3. Rate the following areas of your institution's library in terms of adequacy for your teaching and research needs;

CU	Circ. Pol.	Circ. Serv.	Qual. of Cat.	Speed of cat.	Serv. at card cat.	Quality of ref.	Amount of ref.	Acq. Proceds.	Qual. of coll'n.	Hours of opening	Int. phys. environ.	Conven. of access	Other
Very adequate	52% (13)	41.7% (10)	28% (7)	20% (5)	20% (5)	32% (8)	20% (5)	16% (4)	4% (1)	34.8% (8)	64% (16)	58.3% (14)	50% (1)
Adequate	36% (9)	54.2% (13)	48% (12)	36% (9)	68% (17)	56% (14)	44% (11)	28% (7)	36% (9)	60.9% (14)	28% (7)	37.5% (9)	0 (0)
Between adequate and inadequate	0 (0)	0 (0)	8% (2)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	4% (1)	4.3% (1)	0 (0)	0 (0)	0 (0)
Inadequate	12% (3)	4.2% (1)	8% (2)	20% (5)	4% (1)	4% (1)	16% (4)	32% (8)	52% (13)	0 (0)	8% (2)	0 (0)	50% (1)
Totally Inadequate	0 (0)	0 (0)	0 (0)	4% (1)	0 (0)	0 (0)	0 (0)	12% (3)	4% (1)	0 (0)	0 (0)	0 (0)	0 (0)
No opinion	0 (0)	0 (0)	8% (2)	20% (5)	8% (2)	8% (2)	20% (5)	12% (3)	0 (0)	0 (0)	0 (0)	4.2% (1)	0 (0)
Missing	(0)	(1)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(2)	(0)	(1)	(0)
Total	100% (25)	100% (25)	100% (25)	100% (25)	100% (25)	100% (25)	100% (25)	100% (25)	100% (25)	100% (25)	100% (25)	100% (25)	100% (2)

III. 3. Rate the following areas of your institution's library in terms of adequacy for your teaching and research needs:

HC	Circ. Pol.	Circ. Serv.	Qual. of cat.	Speed of cat.	Serv. at card cat.	Quality of ref.	Amount of ref.	Acq. Proceds.	Qual. of coll'n.	Hours of opening	Int. phys. environ.	Conven. of access	Oth.
Very adequate	80.6% (25)	70% (21)	61.3% (19)	38.7% (12)	61.3% (19)	41.9% (13)	35.5% (11)	38.7% (12)	23.3% (7)	46.7% (14)	12.9% (4)	32.3% (10)	
Adequate	6.5% (2)	23.3% (7)	35.5% (11)	38.7% (12)	32.3% (10)	41.9% (13)	48.4% (15)	51.6% (16)	53.3% (16)	40% (12)	38.7% (12)	41.9% (12)	
Between adequate and inadequate	0 (0)	0 (0)	0 (0)	3.2% (1)	0 (0)	0 (0)	0 (0)	0 (0)	6.7% (2)	0 (0)	0 (0)	0 (0)	
Inadequate	3.2% (1)	3.3% (1)	0 (0)	9.7% (3)	0 (0)	0 (0)	0 (0)	3.2% (1)	13.3% (4)	6.7% (2)	38.7% (12)	12.9% (4)	
Totally Inadequate	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	3.2% (1)	
No opinion	9.7% (3)	3.3% (1)	3.2% (1)	9.7% (3)	6.5% (2)	16.1% (5)	16.1% (5)	6.5% (2)	3.3% (1)	6.7% (2)	9.7% (3)	9.7% (3)	
Missing	(1)	(2)	(1)	(1)	(1)	(1)	(1)	(1)	(2)	(2)	(1)	(1)	
Total	100% (32)	100% (32)	100% (32)	100% (32)	100% (32)	100% (32)	100% (32)	100% (32)	100% (32)	100% (32)	100% (32)	100% (32)	

III. 3. Rate the following areas of your institution's library in terms of adequacy for your teaching and research needs:

WPI	Circ. Pol.	Circ. Serv.	Qual. of cat.	Speed of cat.	Serv. at card cat.	Quality of ref.	Amount of ref.	Acq. Proceds.	Qual. of coll'n.	Hours of opening	Int. phys. environ.	Conven. of access	Oth.
Very adequate	70% (21)	70% (21)	60% (18)	33.3% (10)	56.7% (17)	56.7% (17)	56.7% (17)	30% (9)	20% (6)	50% (15)	65.5% (19)	69.1% (20)	100% (1)
Adequate	26.7% (8)	26.7% (8)	36.7% (11)	26.7% (8)	36.7% (11)	30% (9)	26.7% (8)	43.3% (13)	46.7% (14)	43.3% (13)	31% (9)	24.1% (7)	0 (0)
Between adequate and inadequate	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	10% (3)	0 (0)	0 (0)	0 (0)	0 (0)
Inadequate	3.3% (1)	3.3% (1)	3.3% (1)	6.7% (2)	0 (0)	3.3% (1)	3.3% (1)	16.7% (5)	20% (6)	6.7% (2)	0 (0)	0 (0)	0 (0)
Totally Inadequate	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	3.3% (1)	0 (0)	0 (0)	3.4% (1)	0 (0)
No opinion	0 (0)	0 (0)	0 (0)	33.3% (10)	6.7% (2)	10% (3)	13.3% (4)	10% (3)	0 (0)	0 (0)	3.4% (1)	3.4% (1)	0 (0)
Missing	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(1)	(0)
Total	100% (30)	100% (30)	100% (30)	100% (30)	100% (30)	100% (30)	100% (30)	100% (30)	100% (30)	100% (30)	100% (30)	100% (30)	100% (1)

IV. 1. Have you ever used the following cooperative library services:

(Clark)	WACL ILL	ULS	Shared Privileges	Other ILL
Yes	60% (15)	52.2% (12)	25% (6)	73.9% (17)
No	40% (10)	47.8% (11)	75% (18)	26.1% (6)
Missing	(0)	(2)	(1)	(2)
Total	100% (25)	100% (25)	100% (25)	100% (25)

(Holy Cross)	WACL ILL	ULS	Shared Privileges	Other ILL
Yes	64.5% (20)	45.2% (14)	58.6% (17)	71.9% (23)
No	35.5% (11)	54.8% (17)	41.4% (12)	28.1% (9)
Missing	(1)	(1)	(3)	(0)
Total	100% (32)	100% (32)	100% (32)	100% (32)

(Worc. Poly. Inst.)	WACL ILL	ULS	Shared Privileges	Other ILL
Yes	65.5% (19)	41.4% (12)	53.3% (16)	60% (18)
No	34.5% (10)	58.6% (17)	46.7% (14)	40% (12)
Missing	(1)	(1)	(0)	(0)
Total	100% (30)	100% (30)	100% (30)	100% (30)

IV. 2. Approximately how often have you used these services during the last academic year (September 1976 to present)?

	WACL ILL				ULS			
	CU	HC	WPI	ALL	CU	HC	WPI	ALL
About 1 week	20% (5)	22.6% (7)	27.6% (8)	23.5% (20)	26.1% (6)	24.1% (7)	14.8% (4)	21.5% (17)
About 1 month								
About 1 semester	32% (8)	41.9% (13)	37.9% (11)	37.6% (32)	21.7% (5)	27.6% (8)	25.9% (7)	25.3% (20)
Less than 1 semester								
Never	48% (12)	35.5% (11)	34.5% (10)	38.8% (33)	52.2% (12)	48.3% (14)	59.3% (16)	53.2% (42)
Missing	(0)	(1)	(1)	(2)	(2)	(3)	(3)	(8)
Total	100% (25)	100% (32)	100% (30)	100% (87)	100% (25)	100% (32)	100% (30)	100% (87)

IV. 2. (continued) Approximately how often have you used these services during the last academic year (September 1976 to present)?

	FACULTY PRIVILEGES				ILL			
	CU	HC	WPI	ALL	CU	HC	WPI	ALL
About 1 week About 1 month	13.6% (3)	27.6% (8)	13.8% (4)	18.8% (15)	34.8% (8)	38.7% (12)	30% (9)	34.5% (29)
About 1 semester Less than 1 semester	9.1% (2)	41.4% (12)	34.5% (10)	30% (24)	26.1% (6)	25.8% (8)	30% (9)	27.4% (23)
Never	77.3% (17)	31% (9)	51.7% (15)	51.3% (41)	39.1% (9)	35.5% (11)	40% (12)	38.1% (32)
Missing	(3)	(3)	(1)	(7)	(2)	(1)	(0)	(3)
Total	100% (25)	100% (32)	100% (30)	100% (87)	100% (25)	100% (32)	100% (30)	100% (87)

IV. 3. If you have never used these services, why not?

	WACL ILL				ULS			
	CU	HC	WPI	ALL	CU	HC	WPI	ALL
Not necessary	80% (8)	66.7% (8)	62.5% (5)	70% (21)	50% (4)	43.8% (7)	57.1% (8)	50% (19)
Not aware of	20% (2)	25% (3)	12.5% (1)	20% (6)	50% (4)	56.3% (9)	28.6% (4)	44.7% (17)
Other	0 (0)	8.3% (1)	25% (2)	10% (3)	0 (0)	0 (0)	14.3% (2)	5.3% (2)
Missing	(0)	(1)	(0)	(4)	(5)	(3)	(4)	(12)
Total	100% (10)	100% (13)	100% (8)	100% (34)	100% (13)	100% (19)	100% (18)	100% (50)

IV. 3. (continued) If you have never used these services, why not?

	FACULTY PRIVILEGES				ILL			
	CU	HC	WPI	ALL	CU	HC	WPI	ALL
Not necessary	84.6% (11)	75% (6)	72.7% (8)	78.1% (25)	60% (3)	66.7% (8)	70% (7)	66.7% (18)
Not aware	15.4% (2)	12.5% (1)	27.3% (3)	9.4% (3)	40% (2)	16.7% (2)	10% (1)	18.5% (5)
Other	0 (0)	12.5% (1)	0 (0)	12.5% (4)	0 (0)	16.7% (2)	20% (2)	14.8% (4)
Missing	(6)	(6)	(4)	(16)	(3)	(1)	(2)	(6)
Total	100% (19)	100% (14)	100% (15)	100% (48)	100% (8)	100% (13)	100% (12)	100% (33)

IV, 4. If you have used these services, how well did they satisfy your need?

	WACL ILL			ULS			FACULTY PRIVILEGES			ILL		
	CU	HC	WPI	CU	HC	WPI	CU	HC	WPI	CU	HC	WPI
Adequately	100% (13)	100% (20)	94.7% (18)	90.9% (10)	84.6% (11)	100% (11)	85.7% (6)	93.8% (15)	87.5% (14)	62.5% (10)	94.4% (17)	94.4% (17)
Inadequately	0 (0)	0 (0)	5.3% (1)	0 (0)	7.7% (1)	0 (0)	0 (0)	0 (0)	0 (0)	37.5% (6)	0 (0)	5.6% (1)
No opinion	0 (0)	0 (0)	0 (0)	9.1% (1)	7.7% (1)	0 (0)	14.3% (1)	6.3% (1)	12.5% (2)	0 (0)	5.6% (1)	0 (0)
Missing	(2)	(2)	(0)	(3)	(3)	(0)	(2)	(5)	(2)	(2)	(3)	(12)
Total	100% (15)	100% (22)	100% (19)	100% (14)	100% (16)	100% (11)	100% (9)	100% (21)	100% (18)	100% (18)	100% (21)	100% (30)

IV 4. If you have used (cooperative) services, how well did they satisfy your need?

(All)	WACL ILL	ULS	Shared Privileges	Other ILL
Adequate	98.1% (51)	91.4% (32)	89.8% (35)	84.6% (44)
Inadequate	1.9% (1)	2.9% (1)	0 (0)	13.5% (7)
No opinion	0 (0)	5.7% (2)	10.3% (4)	1.9% (1)
Missing	(4)	(7)	(9)	(5)
Total	100% (56)	100% (42)	100% (48)	100% (57)

V. 1. When you use your institution's library, which area do you find in need of the greatest improvement?

Responses from CU:

Needs	Frequency
Journal holdings	9
General collection	8
Library funding	4
Acquisitions procedures	3
Government documents	2
Hours of opening out-of-term	2
Circulation policies	2
Stacks	1
Physical facilities (cleanliness)	1
All	1

Responses from HC:

Needs	Frequency
General collection	7
Physical facilities (lack of space)	7
Journal holdings	4
Organization of collection	3
Security	2
A/V, microform equipment	2
Cataloging	2
Acquisitions policies	1
Hours of opening out-of-term	1
All	1
No serious problems	3

Sample comment: "Physical improvement--wretched light timers in the stax are horrendous. The Dinand staff is great."

Responses from WPI:

Needs	Frequency
Journal holdings	7
General collection	6
Physical access to library	1
Physical facilities (working areas)	1
Hours of opening out-of-term	1
Acquisitions policies	1
Access to photocopier	1
Library reference personnel	1

V. 2. If you have any suggestions for improving interlibrary services among these three institutions, please feel free to comment on them:

Sample responses from CU:

"Since new journals appear frequently and any one library is reluctant to start subscriptions to very many new ones, a system should be worked out to make sure that one of the libraries subscribes to each important new journal; tables of contents of new issues should be xeroxed and kept at the other consortium libraries for users to inspect so that needed articles could be obtained on the shuttle."

"The libraries of the three institutions may cooperate, but each is so unique to the needs of its home institution, I fail to see how they could be merged in any way."

"None. They are excellent."

Sample responses from HC:

"Cannot think of any--usually well satisfied with services."

"Would like to see more publicity regarding availability of services."

Sample responses from WPI:

"Many new journals are missing in the Worcester area. We need a cooperative effort to add them."

"Is student borrowing from all 3 libraries possible?"

APPENDIX E

STUDENT LIBRARY USE SURVEY: DATA TABULATIONS

1. What is your current class standing?

Responses from:	Clark	Holy Cross	WPI
a) Freshman	1	7	7
b) Sophomore	1	2	8
c) Junior	8	8	3
d) Senior	13	8	6
e) Master's	2	0	1
f) Ph.D.	0	0	0
g) Other	0	0	0
Total	25	25	25

2. What is your major field of study?

Responses from:	Clark	Holy Cross	WPI
a) Art History	1	0	0
b) Biology	1	3	0
c) Chemistry	2	0	3
d) Chemical Engineering	0	0	5
e) Civil Engineering	0	0	2
f) Computer Science	0	0	1
g) Economics	0	5	0
h) Electrical Engineering	0	0	5
i) English	1	5	0
j) Fine Arts	0	2	0
k) Geography	3	0	0
l) Government	2	0	0
m) History	0	3	0
n) Journalism	1	0	0
o) Life Sciences	0	0	2
p) Management Engineering	0	0	1
q) Mathematics	1	1	2
r) Mechanical Engineering	0	0	4
s) Philosophy	5	0	0
t) Political Science	0	3	0
u) Psychology	2	2	0
v) Psychology Education	1	0	0
w) Religious Studies	0	1	0
x) Sociology	4	1	0
y) Spanish	1	0	0
z) Undecided	1	0	0
Total	26*	26*	25

3. Are you registered as a student at this institution?

Responses from:	Clark	Holy Cross	WPI
a) Yes	24	25	25
b) No	1	0	0
Total	25	25	25

4. If No, where are you registered?

Responses from:	Clark	Holy Cross	WPI
a) Clark	-	0	0
b) Holy Cross	1	-	0
c) WPI	0	0	-
Total	1	0	0

*Includes a double major.

5. Are you now or have you ever been cross-registered at another tri-college institution?

	Responses from:	Clark	Holy Cross	WPI
a)	Yes, currently	0	1	3
b)	Yes, previously	0	4	2
c)	No	25	20	20
	Total	25	25	25

6. If yes, where?

	Responses from:	Clark	Holy Cross	WPI
a)	Clark	-	1	2
b)	Holy Cross	0	-	3
c)	WPI	0	4	-
	Total	0	5	5

7. Approximately how often during the past academic year (September 1976 to present) did you use the library facilities of the following institutions?

		Clark University Library			Holy Cross Library			WPI Library			Any other Worcester Library		
	Responses from:	CU	HC	WPI	CU	HC	WPI	CU	HC	WPI	CU	HC	WPI
a)	1/week or more	16	2	1	1	16	1	0	0	21	-	-	-
b)	2/month	4	1	1	0	1	1	2	0	3	-	-	-
c)	1/month	3	8	2	1	4	1	1	2	0	-	-	-
d)	1/semester	2	2	6	8	4	3	5	2	1	-	-	-
	Use subtotal	25	13	10	10	25	6	8	4	25	-	-	-
e)	Never	0	12	15	15	0	19	17	21	0	2	11	10
	Total	25	25	25	25	25	25	25	25	25	2	11	10

	Other:	Assumption			U.Mass.Med.			Worcester Art Museum			Worc. Cty Law Library		
	Responses from:	CU	HC	WPI	CU	HC	WPI	CU	HC	WPI	CU	HC	WPI
a)	1/week or more	0	0	0	1	1	0	0	0	0	0	0	1
b)	2/month	0	0	0	0	0	2	0	0	1	0	0	0
c)	1/month	0	0	0	1	1	0	0	0	0	1	1	0
d)	1/semester	1	1	0	2	1	0	1	0	0	0	0	0
	Use subtotal	1	1	0	4	3	2	1	0	1	1	1	1
e)	Never	0	0	0	0	0	0	0	0	0	0	0	0
	Total	1	1	0	4	3	2	1	0	1	1	1	1

	Other:	WFEB			Worcester Public Library			Worcester State College		
	Responses from:	CU	HC	WPI	CU	HC	WPI	CU	HC	WPI
a)	1/week or more	0	0	1	0	0	2	0	0	1
b)	2/month	0	0	0	1	1	3	0	0	0
c)	1/month	0	0	0	9	4	2	0	0	0
d)	1/semester	1	0	0	8	5	6	1	0	1
	Use subtotal	1	0	1	18	10	13	1	0	2
e)	Never	0	0	1	0	0	0	0	0	0
	Total	1	0	2	18	10	13	1	0	2

8. Why did you use the library facilities of the other two institutions?

Responses from:	Clark			Holy Cross		WPI	
Libraries:	CU	HC	WPI	CU	WPI	CU	HC
a) Better collection	1*	6	9	7	3	8	6
b) Convenience of physical access	0	1	1	1	0	0	0
c) Helpfulness of staff	0	0	0	0	0	0	0
d) Hours of opening	0	0	0	0	0	1	0
e) Interior physical environment	0	0	0	5	0	1	0
f) Other	0	0	1	0	1	0	0
Total	1	7	11	13	4	10	6

*for Holy Cross student interviewed at Clark

9. When you use one of the other two libraries do you usually:

Responses from:	Clark	Holy Cross	WPI
a) Go in private car	10	11	9
b) Take consortium shuttle bus	2	4	2
c) Use ILL delivery service	8	7	7
d) Other	0	0	2

10. When you use the tri-college libraries, do you usually:

	Clark Library			Holy Cross Library			WPI Library		
Responses from:	CU	HC	WPI	CU	HC	WPI	CU	HC	WPI
a) Check out or return materials	21	4	0	4	14	0	5	3	16
b) Study from own materials	14	2	2	8	20	2	2	3	20
c) Consult reference materials	18	1	3	7	15	1	4	2	20
d) Consult librarians	11	3	2	3	6	0	0	1	10
e) Use bibliographical tools	21	4	4	6	13	0	3	3	15
f) Find mat'ls for class assignm'ts	16	2	4	4	14	0	1	3	17
g) Locate mat'ls for research	21	6	5	10	19	2	5	3	20
h) Locate general recreat'l read.	5	2	1	0	5	0	2	2	15
i) Locate mat'ls for other purposes	3	0	0	1	3	0	2	1	5
j) Other	0	0	0	0	0	0	1	0	2

11. What kind of materials do you usually use in the tri-college libraries?

	Clark Library			Holy Cross Library			WPI Library		
Responses from:	CU	HC	WPI	CU	HC	WPI	CU	HC	WPI
a) Books	22	7	4	10	21	1	5	4	21
b) Journals, magazns.	19	5	5	5	12	2	5	2	17
c) Newspapers	5	0	0	0	8	0	0	1	12
d) Microforms	5	0	0	0	8	0	0	1	6
e) Audiovisual equip.	3	0	0	0	2	0	0	0	14
f) Other	0	1	0	1	0	1	2	0	0

12. When you use these three libraries, are you usually:

		Clark Library			Holy Cross Library			WPI Library		
	Responses from:	CU	HC	WPI	CU	HC	WPI	CU	HC	WPI
a)	Satisfied	8	7	7	14	12	1	5	3	15
b)	Dissatisfied	12	0	0	0	7	0	3	0	1
c)	No opinion	0	1	0	2	2	2	1	2	2
d)	Betw. Sat.-Dissat.	3	0	0	1	3	1	0	1	5
	Total	23	8	7	17	24	4	9	6	23

13. What do you like best about your institution's library?

	Responses from			CU	HC	WPI
a)	Collection:	General		5	0	0
		Journals		2	0	0
		Reference		0	0	1
		Technical		0	0	6
		Arrangement of materials		1	0	0
		Total		8	0	7
b)	Physical Facilities:	Exterior		3	2	0
		Interior	- General	5	0	0
			- Study Space	0	4	3
			- Quiet	0	3	5
		Special rooms	- Music rooms	1	1	1
			- Oral Study Rooms	1	-	-
			- Reilly Room	-	1	-
		Convenient location		2	4	1
		Total		12	15	10
c)	Staff:	Librarians		4	1*	3
d)	Library Operation and Services:					
		General		0	0	2
		Hours of opening		0	1	1
		Interlibrary Loan		0	0	1
		Total		0	1	4
e)	Equipment:	Photocopier		2	0	0
		Audio-visual		0	0	5
		Total		2	0	5
f)	No "best" element			7	12	6

14. What do you like least about your institution's library?

	Responses from:		CU	HC	WPI
a)	Collection:	Inadequate in general	6	15	1
		Inadequate in own field	1	3	2
		Inadequate in reference	0	0	1
		Inadequate in humanities	0	0	3
		Inadequate in recreational reading	0	0	2
		Inadequate in journals	5	0	0
		Outdated; lack of current materials	5	2	1
		Lack of funding	1	0	0
		Arrangement difficult to use	4	2	0
		Maintenance (missing materials)	7	1	2
		Total	29	23	12
b)	Physical facilities:	Generally inadequate	0	3	0
		Lack of study space	1	7	0
		Lack of closed study rooms	1	0	2
		Noisy	8	4	4
		Inadequate lighting	6	0	0
		Inadequate heat control	3	0	1
		Cigarette smoke	1	0	0
		Total	20	14	7
c)	Staff:	Not enough librarians	1	0	0
		Not enough support staff	0	0	1
		Total	1	0	1
d)	Library operation and services:				
		Limited hours of opening	0	1	4
		Reserve book system	1	0	0
		Circulation - Journal loan policy	2	0	0
		- Incorrect recalls	0	1	0
		Total	3	2	4

*Science Library

15. I would use the (Clark, Holy Cross, WPI) library more if:

	Clark Library			Holy Cross Library			WPI Library		
Responses from:	CU	HC	WPI	CU	HC	WPI	CU	HC	WPI
a) Improve collection:									
In general	9	0	0	1	5	0	1	0	2
In non-technical fields	0	0	0	0	0	0	0	0	4
In technical fields	0	0	1	0	0	2	0	0	2
In journals	2	0	0	0	0	0	0	0	5
In foreign languages	0	0	0	0	0	0	0	0	1
Easier arrangement	0	0	3	0	0	0	0	0	0
Better maintenance of missing materials	1	0	0	0	0	0	0	0	0
Total	12	0	4	1	5	2	1	0	14
b) Improve physical facilities:									
In general	1	0	0	1	2	0	0	0	0
More study space	0	0	0	0	11	0	0	0	1
Quieter	8	3	0	0	3	0	1	0	1
Better lighting	6	1	1	0	0	0	0	0	0
Better temperature control	1	0	0	0	1	0	0	0	0
Control of cigarette smoking	1	0	0	0	0	0	0	0	0
More convenient location	1	9	5	6	0	4	3	4	0
	18	13	6	7	17	4	4	4	2
c) Improve library operation and services:									
Increase hours of opening	1	0	0	0	0	0	0	0	2
Allow eating, drinking	0	0	0	0	0	0	0	0	1
Improve reserve book system	1	0	0	0	0	0	0	0	0
Increase security	1	0	1	0	1	0	0	0	0
Improve circulation - Lower overdue fines	1	0	0	0	0	0	0	0	1
- Increase loan periods	0	0	0	0	0	0	1	0	0
Increase interlibrary services									
- Publicize services	1	0	2	1	0	2	1	0	0
- Give orientation tours	0	0	0	1	0	0	1	0	0
- Improve interlibrary loan	2	0	0	0	0	0	0	0	0
- Freer student borrowing privileges	0	2	0	3	0	0	2	0	0
- Increase shuttle bus runs	0	3	1	2	0	0	2	0	0
Total	7	5	4	7	1	2	7	0	4
d) Improve equipment:									
Photocopier	0	0	0	0	0	0	0	0	1
e) Necessary to find specific item or course	0	2	4	2	0	3	1	1	0
f) No improvement necessary	0	3	0	0	4	0	0	0	0
g) Would not use more (no need)	0	5	10	11	0	12	13	21	2
h) Would not use more (maximum use now)	5	0	0	0	3	1	0	0	10